

NEZ PERCE ETHNOBOTANY: A SYNTHETIC REVIEW

Report to National Park Service
Nez Perce National Historical Park, Spalding, Idaho

Joy Mastrogiuseppe

June 2000

APPENDIX B. ANNOTATED BIBLIOGRAPHY

Abrams, J. 1996. Rooted in the Culture. Lewiston Morning Tribune Sunday, Dec. 1: pp. 1A and 6A. Lewiston, Idaho.

Summary: This article tells the story of Nez Perce people who have returned to a traditional Nez Perce diet in order to control diabetes. It features Nellie Axtell and Della Wheeler, who both fought diabetes by adopting a traditional diet featuring camas, cous, other root foods, and native fruits. They have been very pleased with the restored health, which has resulted from this change in diet.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: A diet featuring traditional Nez Perce plant foods can have a beneficial effect on health.

Implications for future management of Nez Perce National Historical Park lands: One traditional camas digging area is mentioned--Musselshell Meadow.

About the author: Abrams, Joan

Author category: Journalism

Background: Staff Writer, Lewiston Morning Tribune, Lewiston, Idaho

Special interests: Writing about Native cultures

Methodology: Interviews, library research

Context: traditional Nez Perce

Specific Nez Perce plants discussed in this reference (8 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ledum glandulosum* Nuttall**

Nez Perce name: **písqu**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter, they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly, "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter, they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits Use category: Food, Technology, Medicine, Cosmetic
Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."
Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter, they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained
Nutritional value: Fruits 30 mg vitamin C per 100g.
Other plants used in similar ways: Food: *Prunus emarginata*.
Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Vaccinium* spp.**

Nez Perce name:
Plant family: Ericaceae English name: huckleberries, blueberries
Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.
Habitat: Montane.
Plant parts used: fruits Use category: Food, Beverage
Specific uses: Food: fruits.
Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.
Nutritional value: Fruits 7-16% mg vitamin C.
Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Ackerman, L.A. 1982. Sexual equality in the Plateau Culture Area. Ph.D. Dissertation, Washington State University, Pullman, WA. 172 pp.

Summary: This dissertation investigates sexual equality among indigenous Columbia Plateau peoples as represented by people (from twelve tribes) living on the Colville Indian Reservation. Ackerman concludes that men and women had and still have equal access to power, authority, and autonomy with respect to domestic matters, economics, politics, and religion. Table 2 (p. 19) summarizes criteria used to analyze autonomy.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: The Joseph Band of the Nez Percés was included in this study.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ackerman, Lillian A.

Author category: Ethnography

Background: Adjunct Associate Professor, Washington State University, Pullman, and Contracting Ethnographer. Ph.D. Anthropology Washington State University 1981

Special interests: Plateau Indian culture, women's traditional and contemporary roles

Methodology: Field and library research; interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lewisia redeviva* Pursh**

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English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

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Plant parts used: roots

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Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

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Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly, "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Ackerman, L. A (ed.). 1996. A Song to the Creator: Traditional Arts of Native American Women of the Plateau. Univ. of Oklahoma Press. Norman, Oklahoma. 174 pp.

Summary: A Song to the Creator was published in conjunction with the Washington State University Museum of Art exhibit by the same name. The book features interviews with participating artists, including several Nez Perces. Plateau culture and women's roles are discussed, and information is presented about plants relevant to art, especially basketry. Figures of special ethnobotanical interest include Fig. 9 (a tule mat tipi), Fig. 10 (berrypicking), Fig. 53 (Nez Perce woman with a sack of roasted camas). Plate 1 shows a cornhusk bag made with traditional materials; Plates 2-5 show cornhusk bags made with contemporary materials.

Methodology: Field and library research; interviews with the artists

Significance to Nez Perce ethnobotany: The book accurately reflects contemporary use of plants in Nez Perce arts, especially textile arts.

Implications for future management of Nez Perce National Historical Park lands: This book illustrates the importance of gathering areas for basketry materials.

About the author: Ackerman, Lillian A.

Author category: Ethnography

Background: Adjunct Associate Professor, Washington state University, Pullman, and Contracting Ethnographer. Ph.D. Anthropology Washington State University 1981

Special interests: Plateau Indian culture, women's traditional and contemporary roles

Methodology: Field and library research; interviews

Context: scientific/academic

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Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Berberis aquifolium Pursh var. repens (Lindley) H. Scoggan

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

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***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, much of US, southern Canada.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring.

Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter, they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to

scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use, they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Alcorn, R. L., and G. D. Alcorn. 1974. Summer carpet, winter food. *Frontier Times* 42(1): 38-39, 66.

Summary: The Alcorns present an account of a visit with Nez Perce elder Elizabeth Wilson. They dug kouse with her, saw native plant foods she had stored, and heard stories of her people.

Methodology: Interview, library research

Significance to Nez Perce ethnobotany: The plants discussed in this article were Nez Perce staples.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Alcorn, Rowena L.

Author category: Writer

Background:

Special interests: Northwest Indians

Methodology: Interview, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (4 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard, emergency clothing (twined with other plant fibers), black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter, it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes,

chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweathouse to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Alcorn, R. L., and G. D. Alcorn. 1974. Wild Foods of the Nez Perce. Pacific Search 10(3): 8.

Summary: This article sketches a picture of Nez Perce life during the second half of the 19th century, including a brief description of three important plant foods.

Methodology: Interviews and library research

Significance to Nez Perce ethnobotany: The information on food plants was provided by Elizabeth Wilson (Nez Perce).

Implications for future management of Nez Perce National Historical Park lands:

About the author: Alcorn, Rowena L.

Author category: Writer

Background:

Special interests: Northwest Indians

Methodology: Interviews and library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (3 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter, it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Ambrose, S. E. 1996. *Undaunted Courage: Meriwether Lewis, Thomas Jefferson, and the Opening of the American West*. Touchstone. New York. 521 pp.

Summary: Ambrose's account of the 1804-1806 Journey of Discovery is written from the viewpoint of Euroamerican history. It includes biographic information on Lewis and the background of Jefferson's formation of the Corps of Discovery, a description of the journey with excerpts from the party's journals, and events after the explorers' return to St. Louis. Pages 293-304 and 359-375 cover the Corps' travels in Nez Perce and Palouse territory.

Methodology: Library research

Significance to Nez Perce ethnobotany: A few Nez Perce plants are mentioned and there is a discussion of the effects of eating camas on the explorers' systems, camas that was given them by Nez Perce people and saved the Corps from starvation.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ambrose, Stephen E.

Author category: History

Background: Founder and President, National D-Day Museum. Professor of History at several colleges. Ph.D. University of Wisconsin, M.A. Louisiana State University, B.A. University of Wisconsin

Special interests: Biography

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (8 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache, the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter, they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter, it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine:

tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Ames, K. K., and A. G. Marshall. 1980-81. Villages, demography, and subsistence intensification on the southern Columbia Plateau. *North American Archaeologist* 2(1): 25-52.

Summary: This important paper considers the development of semi-sedentism on the southern Columbia Plateau in relation to availability of food resources and population size. It also reviews cultural chronology of the area as interpreted by various archaeologists. Ames and Marshall propose that plant resources (root foods) were the critical storable resource for traditional peoples of the southern Plateau and thus were the critical factor in settlement location and subsistence intensification.

Methodology: Analysis of archaeological data and interpretation from the viewpoint of ethnographic comparison

Significance to Nez Perce ethnobotany: The paper uses the Nez Perce people as the basis for ethnographic comparison.

Implications for future management of Nez Perce National Historical Park lands: This study underlines the importance of camas meadows and other root grounds.

About the author: Ames, Kenneth K.

Author category: Archaeology

Background: Professor of Anthropology, Portland State University. Ph.D. Washington State University, Pullman 1976

Special interests: Cultural ecology, social archaeology, method and theory

Methodology: Analysis of archaeological data and interpretation from the viewpoint of ethnographic comparison

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter, they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Ames, K. K., D. E. Dumond, J. R. Galm, and R. Minor. 1998. Prehistory of the Southern Plateau. Pp. 103-119 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: It surprises me that use of the terms "prehistory" and "prehistoric" are still overwhelmingly prevalent among archaeologists, since some Native American groups are offended by them. This chapter reviews the culture history of the southern Plateau, including the western portions of Nez Perce territory. Little information is presented on plants, and the textile-rich rockshelters along the lower Palouse and Snake Rivers are not discussed, nor are they included on the map of southern Plateau archaeological sites (Fig. 1, p. 104). New information (1999) refutes the statement that "this [up to 4900 years ago] is the only period in Plateau prehistory that is also represented by fiber and wood artifacts and other perishables" (p. 111). There are wood artifacts, hackberry pits, and grasses from Marmes Rockshelter in deposits dating to at least 6000 years ago and wood and seeds in the oldest Marmes deposits (ca. 11,000 years BP).

Methodology: Field and library research

Significance to Nez Perce ethnobotany: From the description of tool types and housing revealed in various archaeological excavations, inferences can be drawn about past plant use on the southern Plateau.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ames, Kenneth K.

Author category: Archaeology

Background: Professor of Anthropology, Portland State University. Ph.D. Washington State University, Pullman 1976

Special interests: Cultural ecology, social archaeology, method and theory

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Anastasio, A. 1972 (1955). The Southern Plateau: An Ecological Analysis of Intergroup Relations. Northwest Anthropological Research Notes 6: 109-229.

Summary: This analysis considers social relations among indigenous groups of the southern Columbia Plateau, including discussion of subsistence activities. The author mentions the importance of plants to technology and stresses the richness of camas meadows and exceptional quality of camas bulbs in Nez Perce territory. He also emphasizes the importance of root foods in trade and the contribution of root foods and basketry to Nez Perce influence among Plateau groups.

Methodology: Interpretation of archaeological sites with ethnographic comparison

Significance to Nez Perce ethnobotany: The paper discusses how the rich root-digging areas of the Nez Perce contributed to their influence among Plateau groups.

Implications for future management of Nez Perce National Historical Park lands: It is important to preserve traditional root-digging areas.

About the author: Anastasio, Angelo

Author category: Ethnography, social anthropology

Background: Assistant Professor of Anthropology, Western Washington State University, Bellingham. Ph.D. University of Chicago 1955, M.A. 1952; AA Boston University 1949

Special interests: Plateau cultures, social relations and ecology

Methodology: Interpretation of archaeological sites with ethnographic comparison

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Andrews, R. W. 1962. Nez Perce - Walla Walla - Umatilla - Wishram - Cayuse - Chinook. Pp. 133-138 in Curtis's Western Indians. Superior Publishing Company, Seattle, WA.

Summary: Andrews presents a brief sketch of the Nez Perce tribe and their intellectual and cultural leadership among Plateau groups. He mentions various bands gathering in May to dig camas.

Methodology: Library research

Significance to Nez Perce ethnobotany: Andrews discusses the importance of camas digging as a social event.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Andrews, Ralph W.

Author category: Writer

Background: Freelance writer; degree from University of Minnesota

Special interests: Western regional history, especially logging and commercial fishing

Methodology: Library research

Context: popular history

Specific Nez Perce plants discussed in this reference (1 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

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Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Anonymous. 1993. Choosing Health: Traditional Wisdom and Today's Food. Narrated by Lilly Kaufman. Video tape produced by Lewis Clark State College, Lewiston, ID. 21.5 min.

Summary: This video was produced to encourage healthful eating by combining traditional Nez Perce foods with grocery-store foods. Nez Perce people discuss important traditional foods including roots and berries, and Allen Slickpoo stresses that eating native foods is a part of being Nez Perce. Slickpoo also describes and explains the months of the year that in Nez Perce are named after important foods. Nellie Axtell reviews her experience with diabetes and how returning to a native diet has freed her of medication.

Methodology: Traditional knowledge, interviews

Significance to Nez Perce ethnobotany: Eight traditional plant foods are discussed in this presentation and some of them are shown in their native habitats.

Implications for future management of Nez Perce National Historical Park lands:

Specific Nez Perce plants discussed in this reference (8 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter, they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Anonymous. 1997. History & Culture of the Cayuse, Umatilla and Walla Walla Indians-Part 2. World Wide Web page <http://ucinet.com/~umatrib/hist2.html>. Confederated Tribes of the Umatilla Indian Reservation. 6 pp.

Summary: This World Wide Web site presents a general discussion of the customs and traditions of these three groups, including the seasonal round.

Methodology: Oral history

Significance to Nez Perce ethnobotany: These groups are closely related to the Nez Perces, and some Nez Perce people live on the Umatilla Reservation.

Implications for future management of Nez Perce National Historical Park lands:

Specific Nez Perce plants discussed in this reference (6 total)

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.

Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds": *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Anonymous. ca. 1997. Nez Perce National Historical Park. World Wide Web site
<http://www.halcyon.com/rdpayne/nphhp>. 10 pp.

Summary: The 'unofficial' Nez Perce National Historical Park World Wide Web site includes a section on edible plants, one on homes, and one on clothing and jewelry. The food section presents a summary of different categories of plant foods, collection and preparation techniques, and importance in Nez Perce culture. In the brief description of housing structures, traditional and more recent, the use of plant materials is mentioned. A list of plants used for color in clothing and jewelry is included in that section.

Methodology: Library research

Significance to Nez Perce ethnobotany: Information on 28 Nez Perce plant foods is presented on this Web site.

Implications for future management of Nez Perce National Historical Park lands:

Specific Nez Perce plants discussed in this reference (34 total):

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp.; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis nervosa Pursh

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cirsium scariosum* Nuttall**

Nez Perce name: **titux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Delphinium* spp.**

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection.

Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderale*

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Larix occidentalis* Nuttall**

Nez Perce name: kimíle

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice,

often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeá t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Ligusticum grayi* Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: licorice-root

Description: Herbaceous perennial from a taproot, with fernlike leaves and small white flowers in an umbrella-shaped cluster.

Habitat: In more or less moist places, open or forested, at middle to high elevations in montane and interior Washington, Oregon, California, Idaho, and Nevada.

Plant parts used: root

Use category: Medicine

Specific uses: Medicine: cough, pneumonia, child's stomachache (root infusion or roots chewed); colds (root infusion, roots chewed, or used in sweat lodge); toothache (root piece placed in cavity)

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing

weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.
Other plants used in similar ways: Food: Rice

Ribes inerme Rydberg

Nez Perce name: pí lus

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp.

Ribes oxycanthoides Linnaeus

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp.

Rosa spp.

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta x tá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú x cimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Anthon, S.I. 1913. The bitterroot. The American Botanist 19(2): 45-48.

Summary: This paper describes bitterroot in poetic terms and discusses Lewis and Clark's comments on the plant. Preparation of the roots by Indians is also described.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Bitterroot was valued by the Nez Perce people, and they traded for its roots or traveled to its habitat to collect them.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Anthon, Soester I.

Author category: Writer

Background: Managing Editor Yakima Daily-Republic, WA; taught school; MS University of Washington 1907.

Special interests: Natural history

Methodology: Library research, observation

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mothers milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Aoki, H. 1994. Nez Perce Dictionary. University of California Press. Berkeley, CA. 1280 pp.

Summary: The main portion of Aoki's dictionary of the Nez Perce language is the Nez Perce - English dictionary, but there is also an English - Nez Perce section. The dictionary includes Nez Perce words for many culturally-important plants. Appendix C (pp. 1276-1278) is a list of Nez Perce plant names.

Methodology: Library research, interviews

Significance to Nez Perce ethnobotany: This work documents Nez Perce plant names in a standardized format.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Aoki, Haruo

Author category: Linguistics

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Special interests: Nez Perce, Cayuse, Oriental languages

Methodology: Library research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (87 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, decaying wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium geyeri* S. Watson**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp.; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehete?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: river sage

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza incana* Nuttall**

Nez Perce name: **čilílx**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage

(rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were

cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Calochortus eurycarpus Watson

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three white to lavender petals with a conspicuous red-purple blotch.

Habitat: Grasslands and open forests at low to moderate elevations, southeast Washington and northeast Oregon to southwest Montana, W Wyoming, northeast Nevada.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Calochortus nitidus Douglas

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three violet petals with a dark purple crescent.

Habitat: Low moist meadows in Whitman Co., Washington and adjacent Idaho up to the Salmon-Clearwater Divide and in the Seven Devils Mountains.; rare.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez

Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Cercocarpus montanus* Rafinesque var. *glaber* (S. Watson) Martin**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf mountain-mahogany

Description: Large shrub or small tree with gnarled growth form; leaves evergreen, broadest near the tip, shiny dark green above, pale beneath, margins toothed; flowers small, without petals, in axillary clusters; fruits small sharp achenes with plume-like persistent style.

Habitat: On rocky hilltops and ridges in dry steppe, canyons, and ridges; inland western North America from central Oregon south and east to the Rocky Mountains and central Mexico.

Plant parts used: wood

Use category: Technology, Medicine

Specific uses: Technology: wood/branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring. Medicine: respiratory problems (bark decoction).

Other plants used in similar ways: Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*

***Cirsium scariosum* Nuttall**

Nez Perce name: **títux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open pine forests and stream terraces.

Cornus canadensis Linnaeus

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

Cornus sericea Linnaeus var. sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison

arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderales*

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp., *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis,

cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.
Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.
Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Lewisia rediviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mothers milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: susé?ey

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in men's sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqá †**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **tiálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: **cí ci ta**

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable;

flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted.

Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Nuphar polysepalum* Engelm**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed);

rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine:

diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out.

Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin

conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring.

Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: teqsté qs

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves Use category: Food, Technology, Medicine
Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).
Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers
Nutritional value: 9% protein. Possibly carcinogenic.
Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**
Plant family: Rhamnaceae English name: cascara
Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.
Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.
Plant parts used: bark, fruits Use category: Food, Medicine
Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).
Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.
Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes aureum* Pursh**

Nez Perce name: **kál**
Plant family: Grossulariaceae English name: golden currant
Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.
Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.
Plant parts used: bark, fruits Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).
Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.
Other plants used in similar ways: Food: Rice

***Ribes inerme* Rydberg**

Nez Perce name: **pí lus**
Plant family: Grossulariaceae English name: sour purple gooseberry; whitestem gooseberry
Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.
Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.
Plant parts used: roots, fruits Use category: Food, Beverage, Medicine
Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).
Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.
Other plants used in similar ways: *Ribes* spp.

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**
Plant family: Rosaceae English name: baldhip rose
Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta x'tá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: cimú x'cimux cimú k

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp., *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply.
Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Percés preferred to collect these berries in the subalpine fir zone.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorus.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Arneson, K. 1993. Nez Perce Flat Twined Bags: A Study of Symbols. M.A. thesis, University of Idaho. Moscow, ID. 169 pp.

Summary: Although Arneson's thesis focuses on symbols used in twined flat bags, it includes a review of Nez Perce culture and history, focusing on women's roles. Plant foods are discussed on pages 31-33. Camas digging and roasting are described on pp. 75-76, and the process of drying berries is detailed on p. 78. Tables 1 and 2 (pp. 66-67 and 70-71) list (respectively) plant materials and coloring agents used in Plateau basketry. Figures 7-12 and 14-32 are color photographs of flat twined bags.

Methodology: Library and museum research

Significance to Nez Perce ethnobotany: Includes more information on coloring agents than most sources.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Arneson, Kathryn

Author category: Art

Background: M.A. University of Idaho

Special interests: Indigenous art

Methodology: Library and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp.; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétiqet

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Delphinium* spp.**

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection.

Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp.

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled

twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring.

Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus nivalis* Douglas ex Hooker**

Nez Perce name: **cicmúxcicmux**

Plant family: Rosaceae

English name: snow dewberry

Description: Prickly bramble vine with evergreen prickly compound leaves (leaflets often lobed); flowers pink to purple or white, with five petals; fruits red.

Habitat: Moist, open to shaded mountain slopes; British Columbia to southwest Oregon and east to Idaho.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: fruits were eaten fresh, or in productive years they were dried for winter.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Axtell, H. P., and M. Aragon. 1997. A Little Bit of Wisdom: Conversations with a Nez Perce Elder. Confluence Press. Lewiston, Idaho. 217 pp.

Summary: This book presents Axtell's reminiscences and descriptions of traditional Nez Perce ways.

Axtell mentions root digging, women sitting on the south side of the long house so they can pray for plant foods that grow on south-facing slopes. He emphasizes that digging roots is one of the few times Nez Percés disturb Mother Earth, and talks about first roots ceremonies, medicinal plants, salvaging wheat, and picking berries.

Methodology: Axtell's comments on his life as a Nez Perce Indian in a traditionally-oriented family, as told to Aragon

Significance to Nez Perce ethnobotany: The book documents traditional ways of a Nez Perce family, including bits of information on plant use.

Implications for future management of Nez Perce National Historical Park lands: Traditional root-digging and berry-picking areas should be preserved.

About the author: Axtell, Horace P.

Author category: Nez Perce

Background: Teaching Nez Perce language and culture at Lewis-Clark State College, Lewiston, ID

Special interests: Dedicated to preserving Nez Perce language and culture, working with Tribal Wolf Education and Research Center

Methodology: Axtell's comments on his life as a Nez Perce Indian in a traditionally-oriented family, as told to Aragon

Context: traditional Nez Perce

Specific Nez Perce plants discussed in this reference (5 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Triticum aestivum Linnaeus

Nez Perce name: peqes

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: gleaned from the fields and boiled until the kernels opened

Vaccinium spp.

Nez Perce name: cemífk

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Fruits picked in summer. Beverage: berries brewed for tea

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the plants and berries produced.

Barrett, S. W., and S. F. Arno. 1982. Indian fires as an ecological influence in the northern Rockies. Journal of Forestry 80: 647-651.

Summary: Historical accounts indicate that Indians in the northern Rocky Mountains burned forests to enhance production of certain plant foods, to maintain open stands for travel, to improve hunting, to clean up refuse, for communications, and to improve grazing for horses. This study analyzes the effects indigenous use of fire had on plant communities by comparing fire frequency in areas of heavy indigenous use with fire frequency in more remote localities. The study found no significant increase in burning after acquisition of the horse.

Methodology: Field and library research, statistical analysis

Significance to Nez Perce ethnobotany: The Nez Percés used fire in managing their environment, and the effects of burning are described in this paper.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Barrett, Stephen W.

Author category: Ecology

Background: USFS fire laboratory, Missoula, MT

Special interests: Fire ecology

Methodology: Field and library research, statistical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (7 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **picpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimile**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive

ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder).

***Salix scouleriana* Barratt**

Nez Perce name: táxs

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

Beckstrom-Sternberg, S.M., J.A. Duke, and J.K. Wain. 1994 (data version). The Ethnobotany Database. World Wide Web site <http://probe.nalusda.gov:8300/cgi-bin/browse/ethnobotdb>.

Summary: This is a searchable online database of worldwide plant uses, focusing on medicinal uses of plants. The database is structured so that the user can search by the common or Latin name of the plant, by medical condition or body organ, or build a specific query. There is also an option to browse through the plants included in the database).

Methodology: Library research

Significance to Nez Perce ethnobotany: The database includes information on plants used in many cultures worldwide. Some of the plants important to Nez Perce people are included.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Beckstrom-Sternberg, Stephen M.

Author category: Plant Genetics

Background: National Institutes of Health Intramural Sequencing Center (NISC), Gaithersburg, USA

Special interests: Ethnobotany

Methodology: Laboratory and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference: (114 total):

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: boughs, bark, decayed wood, pitch, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, decaying wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: 'grass,' *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to 'break' grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Angelica* spp.**

Nez Perce name:

Plant family: Apiaceae English name: angelica
Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.
Habitat: Moist to wet places at various elevations in North America and northern Asia.
Plant parts used: leaves and roots Use category: Food, Medicine, Technology
Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).
Comments: Plant can be confused with water-hemlock.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:
Plant family: Apocynaceae English name: forest dogbane
Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.
Habitat: Drier forest soils and banks at low to high elevations; North America except the southeast US.
Plant parts used: stem fibers Use category: Technology, Medicine
Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).
Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.
Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.
Comments: Not as strong as *Apocynum cannabinum* because the fibers are shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**
Plant family: Apocynaceae English name: dogbane, "Indian-hemp"
Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow 'pods' in pairs, seeds with tuft of hairs.
Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).
Plant parts used: stem fibers; roots; seeds Use category: Food, Technology, Medicine
Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, 'cornhusk' bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).
Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.
Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqhte?í léht**
Plant family: Ranunculaceae English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: seeds, leaves Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos nevadensis* A. Gray**

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: berries, leaves

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: berries, leaves

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name:

Plant family: Asteraceae

English name: river sage

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: stems, bark, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves) chewed, stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish 'petals'.

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: flower buds, young fruits, latex, stem fibers, roots

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plant's milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea.

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Plant latex can cause severe nausea.

***Aster conspicuus* Lindley**

Nez Perce name:

Plant family: Asteraceae

English name: showy aster

Description: Herbaceous perennial from rhizomes; leaves large, ovate, sharply toothed, thick and firm; flowers in dense heads, rays blue to purple.

Habitat: Open woods in the foothills to moderate elevations in the mountains; boreal western North America south to northern Wyoming.

Plant parts used: roots, leaves

Use category: Medicine

Specific uses: Medicine: Skin problems, venereal disease (root infusion)); boils (leaf poultice); hemorrhoids (root infusion externally or leaf poultice); toothache (roots).

Special preparation: Medicine: plants were brewed for an infusion

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root; young flower stalks; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; 'seeds' eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect

bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ('seeds' eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The 'seeds' were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Besseyia rubra* (Douglas) Rydberg**

Nez Perce name:

Plant family: Scrophulariaceae

English name: red besseyia

Description: Small herbaceous perennial from fibrous roots; leaves thick, oval to heart-shaped, margins finely toothed; flowers small, without petals, in a dense spike.

Habitat: Meadows and open slopes; lowlands and lower moderate elevations in the inland Northwest US.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Medicine: Tonic, treating colds (decoction).

Special preparation: Medicine: the fresh or dried roots were brewed for an infusion

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems/leaves/flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea.

***Cercocarpus montanus* Rafinesque var. *glaber* (S. Watson) Martin**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: birchleaf mountain-mahogany

Description: Large shrub or small tree with gnarled growth form; leaves evergreen, broadest near the tip, shiny dark green above, pale beneath, margins toothed; flowers small, without petals, in axillary clusters; fruits small sharp achenes with plume-like persistent style.

Habitat: On rocky hilltops and ridges in dry steppe, canyons, and ridges; inland western North America from central Oregon south and east to the Rocky Mountains and central Mexico.

Plant parts used: wood

Use category: Technology, Medicine

Specific uses: Technology: wood/branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring. Medicine: respiratory problems (bark decoction).

Other plants used in similar ways: Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name:

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: root, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: wood, inner bark, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Dipsacus sylvestris* Hudson**

Nez Perce name:

Plant family: Dipsacaceae

English name: teasel

Description: Tall prickly biennial from a taproot; leaves in pairs, with prickles along the underside; flowers small, pink or purple, in dense spiny cone-like clusters.

Habitat: Widespread European alien, in moist places.

Plant parts used: whole aboveground plant; seed heads

Use category: Technology, Medicine

Specific uses: Technology: seed heads for combing. Medicine: tonic (plant infusion).

Special preparation: Medicine: the flowering plant was dried and brewed into tea

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers

extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled.

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*,
Equisetum palustre

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials.

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*,
Equisetum palustre

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with 'pinched' tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in 'pudding.' Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ('The natives reckon the root unfit for food.' Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion).

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath); body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked. Medicine: roots were chewed for sore throat or tonic.

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower 'seeds' were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, 'striped' with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis

(root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly 'a single oz of dried root gave sufficient/nourishment for a full meal' (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and 'planting' it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Ligusticum canbyi Coulter & Rose

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in

men's sweat lodges, sickrooms, and other areas; curing 'possession' by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **tiítalam**, shoots = **ʔí cis**, upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, 'striped' with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots

burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten. Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two 'lips,' in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers).

Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lupinus polyphyllus* Lindley**

Nez Perce name:

Plant family: Fabaceae

English name: largeleaf lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound, usually glabrous on upper surface, all attached to the stalk at its tip and radiating out like spokes; flowers blue or purple, pea-shaped, in long pyramid-shaped clusters.

Habitat: Moist to wet open or forested places at low to high elevations; western US and adjacent Canada.

Plant parts used: foliage

Use category: Medicine

Specific uses: Medicine: tonic (plant decoction).

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae English name: skunk-cabbage
Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.
Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.
Plant parts used: rhizome and leaves Use category: Technology, Medicine, Spiritualism
Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.
Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Medicago sativa* Linnaeus**

Nez Perce name: ?alpa?álpa
Plant family: Fabaceae English name: alfalfa
Description: Herbaceous perennial, leaves compound, with three oblong leaflets, flowers tiny, pea-like, purple (sometimes white, pink, or yellow), fruits tiny coiled pods.
Habitat: European species widely naturalized in moist-mesic places (cultivated).
Plant parts used: foliage Use category: Technology
Specific uses: Technology: plants to line pit-roasting ovens

***Mentha arvensis* Linnaeus**

Nez Perce name:
Plant family: Lamiaceae English name: field mint
Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.
Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.
Plant parts used: stems/leaves Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.
Special preparation: Food: mint greens were sometimes warmed over a fire before eating.
Nutritional value: Good source of calcium, iron, magnesium

***Nepeta cataria* Linnaeus**

Nez Perce name:
Plant family: Lamiaceae English name: catnip
Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.
Habitat: Introduced from Europe, weedy, disturbed areas.
Plant parts used: stems, leaves, flowers Use category: Medicine
Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction).
Nutritional value: 83 mg vitamin C per 100g

***Nicotiana attenuata* Torrey**

Nez Perce name:
Plant family: Solanaceae English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups. Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.
Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.
Confection: root chewed

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, 'common reed'

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, shoots, leaves, sap

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid 'honey' collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive,

caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, wood, seeds, leaves, pitch

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone 'hearts' for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qáppap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: wood, bark

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Potentilla glandulosum* Lindley**

Nez Perce name:

Plant family: Rosaceae

English name: sticky cinquefoil

Description: Herbaceous glandular perennial with hairy pinnately-compound leaves; flowers yellow, with five petals, buttercup-like; fruits dry, in a dense cluster, resembling tiny beans.

Habitat: Moist to dry meadows, shrub steppe, open forests, lowlands to high elevations; western North America.

Plant parts used: whole plant, leaves

Use category: Medicine

Specific uses: Medicine: tonic(whole plant infusion); stimulant (whole plant infusion or weak leaf decoction)

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with 'mouse-tail' bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was 'ripe'.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: teqsté qs

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Pterospora andromedea* Nuttall**

Nez Perce name:

Plant family: Ericaceae

English name: pinedrops

Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.

Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.

Plant parts used: whole plant

Use category: Technology, Medicine

Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.

Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**

Plant family: Ranunculaceae

English name: sagebrush buttercup

Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.

Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.

Plant parts used: whole plant, toxic

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice).

Spiritualism: decoction as body wash or for purification in sweathouse

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: 'The natives eat and esteem the fruits highly' (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, leaves, fruits/seeds, fruits, young shoots

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtiitqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation

Specific uses:

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits 'hips' which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, 'charm' fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus parviflorus Nuttall

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

Rubus spectabilis Pursh

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use category: Food

Specific uses: Food: young shoots for spring greens; fruits.

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever.

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical 'spongy' stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats.

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).
Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Solidago canadensis* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: goldenrod

Description: Tall unbranched herbaceous perennial in clumps from rhizomes; leaves alternate, long and narrowly lance-shaped, margins sharply toothed and tips long pointed; flowers golden-yellow, in dense heads in branched clusters; fruits tiny, dry, with fluffy hairs.

Habitat: Moist places at low to high elevations; transcontinental North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Toys

Specific uses: Food: leaves for cooked greens; seeds to thicken soups. Beverage: dried flowers for tea. Technology: toy whips. Medicine: respiratory problems, diuretic, or applied externally to stop bleeding (leaf infusion); influenza, diarrhea (flower infusion/decoction); sleeplessness, diarrhea, or excessive crying in babies (bathing in shoot decoction); fever in children (shoot infusion).

Special preparation: Medicine: leaves were dried and powdered.

Comments: Some people are allergic to goldenrod pollen.

***Sorbus scopulina* Greene**

Nez Perce name:

Plant family: Rosaceae

English name: Cascade mountain-ash

Description: Tall shrub with pinnately compound alternate leaves having narrow pointed leaflets; flowers tiny, creamy white, in dense flattish clusters; fruits glossy red berry-like pomes.

Habitat: Montane forests in western and central North America.

Plant parts used: twigs, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: earache (warmed twig inserted into ear); overly frequent urination, to stop bed-wetting (branch infusion).

Special preparation: Food: fruits were usually boiled before eating. For winter they were buried fresh or dried

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after 'hardening' in fire), spears, mat needles, awls, handles, wedges, paddles.

Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural 'doll formation' of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trifolium pratense* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: red clover

Description: Herbaceous perennial from a taproot; leaves with three leaflets; flowers pink to purple, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread at low to high elevations.

Plant parts used: flower heads

Use category: Medicine

Specific uses: Food: flower heads eaten raw or cooked. Medicine: treating stomach cancer (flower head infusion)

***Triticum aestivum* Linnaeus**

Nez Perce name: **peqes**

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: what was gleaned from the fields and boiled until the kernels opened

***Typha angustifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: narrowleaf cattail

Description: Tall narrow herbaceous perennial from thick rhizomes; leaves long, thick, grasslike; flowers very small, in dense spikes, female portion below male portion of spike on same stalk, with a section of bare stalk between them; seeds tiny, with fluffy hairs.

Habitat: In shallow quiet water at a variety of elevations; eastern and central US and central California; introduced in the Northwest US.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes eaten fresh or cooked; pollen used in flour. Technology: leaves for matting, cordage, basketry; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses, diapers. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds (seed fluff).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Other plants used in similar ways: Matting: *Typha latifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Veronica americana* Schweinitz**

Nez Perce name:

Plant family: Scrophulariaceae

English name: American brooklime

Description: Sprawling herbaceous perennial with glabrous short-stalked leaves in pairs; flowers small, pale blue, in racemes, fruits small, heart-shaped.

Habitat: In water of ditches, marshes, ponds, seeps, and quiet streams of lowlands to moderate elevations; North America.

Plant parts used: whole plant

Use category: Medicine

Specific uses: Medicine: emetic

***Veronica anagallis-aquatica* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: water pimpernel

Description: Sprawling herbaceous perennial with glabrous sessile leaves in pairs; flowers small, pale blue, in racemes, fruits small, heart-shaped.

Habitat: Aquatic; introduced from Eurasia and very widespread at low to moderate elevations in North and South America.

Plant parts used: stems/leaves

Use category: Food

Specific uses: Food: fresh greens

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in 'ears' with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Benson, E. M., J. M. Peters, M. A. Edwards, and L. A. Hogan. 1973. Wild edible plants of the Pacific Northwest. Journal of the American Dietetic Association 62: 143-147.

Summary: A nutritional analysis of selected native Northwest plants collected by Warm Springs Reservation people is discussed in this paper. The nutritional information helps in assessing the contribution of particular plant foods to the indigenous diet. Table 1 summarizes the nutrient content of plants analyzed.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The study includes eight plants known to have been used by Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Benson, Eva M.

Author category: Nutrition

Background: Department of Home Economics Research, Oregon State University

Special interests:

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (8 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (**qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Bergland, E. O. 1992. Historic period plateau culture tree peeling in the western Cascades of Oregon. Northwest Anthropological Research Notes 25(2): 31-53.

Summary: Indigenous Plateau peoples peeled bark from trees for a variety of uses. This study documents western redcedar and hemlock bark peeling by Warm Springs people in one area of the Oregon Cascade Mountains. The paper suggests uses of the bark peeled from these trees and discusses Warm Springs cultural dynamics at the turn of the century. Included is a very interesting discussion of folded cedar-bark huckleberry baskets describing their manufacture as a Plateau cultural trait. Figures 4-8 are photographs of peeled western redcedar trees, and figures 10-15 illustrate folded-bark baskets and their manufacture.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: The Nez Perce people are known to have used the inner bark of western redcedar for basketry, but the literature does not document whether or not they made folded-bark baskets.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Bergland, Eric O.

Author category: Cultural resources

Background: Willamette National Forest Blue River Ranger District

Special interests:

Methodology: Field and library research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Blankinship, J. W. 1905. The Native Economic Plants of Montana. Montana Agricultural College Experiment Station Bulletin 56: 38 pp.

Summary: Botanists during the late nineteenth and early twentieth centuries were aware of the profound changes in western Native American life resulting from the great reduction in lands available to them. Blankinship's study is one of several intended to document plant use by indigenous peoples of the American West before too much more of this knowledge was lost. Blankinship has compiled data concerning plant use by Montana Indians, drawing on accounts by early Euroamerican explorers and settlers as well as his own observations. He lists important plants and describes their uses. At the end of the paper he also lists these plants by use categories.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This paper is an excellent summary of the importance of many plants used by the Nez Percés as well as the peoples of Montana.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Blankinship, Joseph W.

Author category: Botany

Background: Botanist, Montana Experiment Station; first Curator, Montana State University herbarium, Bozeman. Ph.D. Harvard University 1898, M.A. 1896, B.A. 1894

Special interests: Native plants, ethnobotany

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (81 total):

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to 'break' grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp.; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, 'Indian-hemp'

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow 'pods' in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, 'cornhusk' bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: berries, leaves

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: stems, bark, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed

into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: flower buds, young fruits, latex, stem fibers, roots

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plant's milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea.

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Plant latex can cause severe nausea.

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cililx**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root; young flower stalks; seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; 'seeds' eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ('seeds' eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The 'seeds' were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or

pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Calochortus spp.

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks & leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: wood, bark

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds.

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open Pine forests and stream terraces.

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion).

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage Use category: Medicine, Medicine
Specific uses: Medicine: headache (foliage); horse restorative (root).
Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.
Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:
Plant family: Ranunculaceae English name: western clematis
Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.
Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.
Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff
Use category: Technology, Medicine, Cosmetic
Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).
Other plants used in similar ways: Cordage: Loci

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**
Plant family: Cornaceae English name: red-osier dogwood
Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.
Habitat: Riparian areas and springs from low to high elevations; Western North America.
Plant parts used: wood, inner bark, stems, leaves, fruits
Use category: Food, Technology, Medicine, Smoking; Spiritualism
Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.
Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.
Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.
Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.
Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**
Plant family: Rosaceae English name: Columbia hawthorn
Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.
Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits Use category: Food, Technology
Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.
Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.
Comments: Fruits have 2-5 large stones and were not a favorite.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with 'pinched' tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in 'pudding.' Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ('The natives reckon the root unfit for food.' Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stíme x**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc.
Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.
Medicine: roots were chewed for sore throat or tonic.

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower 'seeds' were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, 'striped' with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin.
Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp., *Symphoricarpos albus*

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly 'a single oz of dried root gave sufficient/nourishment for a full meal' (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and 'planting' it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, 'striped' with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or

formed into small cakes, long loaves, or 'fingerprint' balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots = **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, 'striped' with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, 'Indian celery'

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in three's; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable;

flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted.

Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk.

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Microseris nutans* (Geyer) Schultz-Bipontinus**

Nez Perce name:

Plant family: Asteraceae

English name: nodding microseris

Description: Small herbaceous perennial from fleshy taproot, with milky juice, leaves long and narrow, flowers in yellow heads, dandelion-like, fruits with narrow scales at the top.

Habitat: Moist open places from moderate to high elevations, western interior US and British Columbia.

Plant parts used: root

Use category: Food

Specific uses: Food: roots

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, 'common reed'

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, shoots, leaves, sap

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid 'honey' collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red

ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, wood, seeds, leaves, pitch

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone 'hearts' for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qaqqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: wood, bark

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with 'mouse-tail' bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was 'ripe'.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: 'The natives eat and esteem the fruits highly' (Meehan 1897).

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).
Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.
Other plants used in similar ways: Food: Rice

Ribes cereum Douglas

Nez Perce name: **kimmé**
Plant family: Grossulariaceae English name: wax currant
Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.
Habitat: Lowland shrub steppe to montane forests; inland western North America.
Plant parts used: inner bark, stems/leaves, fruits Use category: Food, Medicine
Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.
Special preparation: Food: fruits were picked in summer and eaten fresh.
Other plants used in similar ways: Food: *Ribes aureum*.
Comments: These fruits were not favored being somewhat dry and bland.

Ribes lacustre (Persoon) Poirét

Nez Perce name: **kimmé**
Plant family: Grossulariaceae English name: swamp black gooseberry
Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.
Habitat: Moist forests and streambanks in montane western and central North America.
Plant parts used: roots, bark, stems, berries Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).
Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.
Other plants used in similar ways: Food: *Ribes* spp.

Ribes spp.

Nez Perce name:
Plant family: Grossulariaceae English name: currants and gooseberries
Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.
Habitat: Woods, riparian areas, washes, moist places, various elevations.
Plant parts used: fruits Use category: Food
Specific uses: Food: fruits.
Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.
Comments: *Ribes* seeds are high in gamma-linoleic acid.

Rosa nutkana Presl

Nez Perce name: **tá msas**
Plant family: Rosaceae English name: wild rose
Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits 'hips'.
Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, 'charm' fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled.

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits 'hips' which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, 'charm' fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue 'berries'.

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as 'pipes' to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical 'spongy' stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including

bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after 'hardening' in fire), spears, mat needles, awls, handles, wedges, paddles.

Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural 'doll formation' of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: **tá ko**

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ('seeds') achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin.

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Boas, F., and J. Teit. 1930. Coeur d'Alene, Flathead and Okanogan Indians. Forty-Fifth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution 1927-1928. Washington, DC. 381 pp.

Summary: Boas and Teit spent time with northern Columbia Plateau peoples during the early 1900's, and this book summarizes the cultures: Coeur d'Alene, the Okanogan-Colville group, and the Flathead group. The book includes detailed information on the importance of plants in these cultures and comparison with other cultures including the Nez Perces. Figure 1 is an interesting drawing of Coeur d'Alene tule mat margins with the tule ends cut different lengths to form designs.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The plant information in this book is extensive and there are many similarities with Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Boas, Franz

Author category: Cultural Anthropology

Background: Professor of Anthropology, Columbia University, NY. Ph.D. University of Kiel; B.A. University of Heidelberg

Special interests: Ethnography

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (83 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Achillea millefolium* Linnaeus**

Nez Perce name: wapalwá pal

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium geyeri* S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp.; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum androsemifolium Linnaeus

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Drier forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a basal rosette, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.

Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds": *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.
Plant parts used: thallus Use category: Food, Technology, Medicine
Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.
Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.
Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.
Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**
Plant family: Liliaceae English name: sagebrush mariposa-tulip
Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.
Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.
Plant parts used: bulbs, flower buds Use category: Food, Medicine
Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).
Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.
Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**
Plant family: Liliaceae English name: camas
Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."
Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.
Plant parts used: bulb, stalks, leaves Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.
Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.
Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.
Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism
Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

Delphinium spp.

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection. Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp

Erythronium grandiflorum Pursh

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

Fragaria virginiana Duchesne

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parship

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth

control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it

would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, B.C.

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.
Plant parts used: tuberous root Use category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.
Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: péqiy
Plant family: Apiaceae English name: nineleaf lomatium, "Indian celery"
Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.
Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.
Plant parts used: shoots, root, flowers, fruits Use category: Food, Medicine
Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk.
Nutritional value: 7% protein.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.
Comments: Especially important source of vitamin C in spring.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:
Plant family: Caprifoliaceae English name: black twinberry
Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.
Habitat: Moist to wet spots at low to high elevations in western North America.
Plant parts used: bark, stems/leaves, fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).
Special preparation: Food: fruits were dried and stored for winter use

***Lupinus polyphyllus* Lindley**

Nez Perce name:
Plant family: Fabaceae English name: largeleaf lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound, usually glabrous on upper surface, all attached to the stalk at its tip and radiating out like spokes; flowers blue or purple, pea-shaped, in long pyramid-shaped clusters.

Habitat: Moist to wet open or forested places at low to high elevations; western US and adjacent Canada.

Plant parts used: foliage

Use category: Medicine

Specific uses: Medicine: tonic (plant decoction).

Other plants used in similar ways: Medicine: *Lupinus* spp

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*istis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway**; **seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Loudon**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qáppaq

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes cereum* Douglas**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta x'tá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: cimú x'cimux cimú k

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Broncheau-McFarland, S. 1992. Tsoop-Nit-Pa-Lu and a Corridor of Change: Evolution of an Ancient Travel Route Nee-Me-Poo Trail. MS Thesis University of Idaho. Moscow, ID. 195 pp.

Summary: This thesis analyzes the Nee-Me-Poo Trail through the Bitterroot Mountains from Idaho into Montana. It presents the geological and biological background, the history of trail development and use, archaeological evidence, and an analysis of the trail as it relates to Nez Perce culture through the centuries. The thesis contains a wealth of ethnobotanical information and discussion of the importance of plants along the trail route. Pages 23-27 summarize ethnobotanical information, but Appendix A presents more detailed information provided by Nez Perce elders.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: Broncheau-McFarland has compiled a lot of information on the importance of plants in Nez Perce culture. Some of the plants included in her study have not been documented elsewhere.

Implications for future management of Nez Perce National Historical Park lands: This study mentions favorite camas-digging areas: Weippe Prairie, Musselshell Meadows, Pack Meadow, Grangeville Prairie, Moscow Prairie, and Big Hole Valley.

About the author: Broncheau-McFarland, Sandra

Author category: Nez Perce

Background: Archaeologist, Clearwater National Forest. M.S. University of Idaho 1992

Special interests: Maintaining cultural traditions

Methodology: Field and library research, interviews

Context: cultural traditions

Specific Nez Perce plants discussed in this reference (96 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes,

sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium tolmiei* (Hooker) Baker ex S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Small strong-scented herbaceous perennials from bulbs; leaves broad, strap-like; flowers pink, in dense umbrella-shaped clusters; flowering stalks broad, flat, tending to lie on the ground.

Habitat: Dry soils at various elevations from southeast from Washington and western Idaho to Northeast California.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: raw or cooked.

Special preparation: Food: bulbs were dug during summer; dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes

with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos nevadensis A. Gray

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: leaves, berries

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Asclepias speciosa Torrey

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albidiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

Aster conspicuous Lindley

Nez Perce name:

Plant family: Asteraceae

English name: showy aster

Description: Herbaceous perennial from rhizomes; leaves large, ovate, sharply toothed, thick and firm; flowers in dense heads, rays blue to purple.

Habitat: Open woods in the foothills to moderate elevations in the mountains; boreal western North America south to northern Wyoming.

Plant parts used: roots, leaves

Use category: Medicine

Specific uses: Medicine: Skin problems, venereal disease (root infusion)); boils (leaf poultice); hemorrhoids (root infusion externally or leaf poultice); toothache (roots).

Special preparation: Medicine: plants were brewed for an infusion

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.

Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus eurycarpus* Watson**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three white to lavender petals with a conspicuous red-purple blotch.

Habitat: Grasslands and open forests at low to moderate elevations, southeast Washington and northeast Oregon to southwest Montana, W Wyoming, northeast Nevada.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea.

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cirsium scariosum* Nuttall**

Nez Perce name: **títux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tips; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tips; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Frasera fastigiata* (Pursh) Heller**

Nez Perce name:

Plant family: Gentianaceae

English name: clustered frasera

Description: Tall succulent herbaceous perennial with whorled leaves, a dense spike of blue flowers with four petals.

Habitat: Moist meadows and moist open forests, lowlands to moderate elevations; Blue Mountains of Oregon and Washington, central and northeast Idaho.

Plant parts used: roots, stems, and leaves

Use category: Food

Specific uses: Food: supplementary fresh vegetable.

Special preparation: Food: roots were dug in summer and boiled or baked, sometimes overnight in pit oven (they contain inulin). Stems and leaves were gathered in June-July and eaten fresh.

Other plants used in similar ways: Food: *Cirsium scariosum*.

Comments: In Nez Perce country this plant occurred on plateau wet prairie meadows but most of the habitat was lost to farming.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium boreale* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: northern bedstraw

Description: Herbaceous perennial from rhizomes, stems square; leaves narrow, in whorls of four; flowers pale yellow, with four petals; fruits round, in pairs.

Habitat: Circumboreal, in wet places.

Plant parts used: roots, seeds

Use category: Food, Technology

Specific uses: Food: seeds. Technology: roots for red or yellow coloring agent.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Lithospermum rudemale*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat

(root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hieracium albiflorum* Hooker**

Nez Perce name:

Plant family: Asteraceae

English name: white hawkweed

Description: Hairy herbaceous perennial with milky juice; flowers white, in small dense heads.

Habitat: Moist to dryish slopes and open forests at low to moderate elevations in the northwest US and adjacent Canada.

Plant parts used: latex, foliage

Use category: Confection

Specific uses: Confection: milky sap.

Special preparation: Confection: the green plant or its coagulated sap was chewed.

Other plants used in similar ways: Chewing gum: *Asclepias speciosa*

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisimsege**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but the fruits are tiny dry capsules.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimile**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Lewisia redeviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum verticillatum* (Geyer) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: rose licorice-root

Description: Fern-like herbaceous perennial from a taproot; flowers white, in umbrella-shaped clusters; fruits in pairs, ribbed.

Habitat: Moist woods to swampy areas in foothills and valleys in northern Idaho and western Montana.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: colds, sore throat (root smoked); fever (root infusion)

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Lupinus argenteus* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: spurred lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound with five grayish-hairy leaflets; flowers pea-shaped, blue, purple, or whitish (occasionally pink); fruits small pods.

Habitat: Forested areas and steppe in the western US south of Washington, east to central Idaho, Montana, Utah, Colorado, and New Mexico.

Plant parts used: seeds

Use category: Medicine

Specific uses: Medicine: to stimulate urination.

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lupinus latifolius* Agardh**

Nez Perce name:

Plant family: Fabaceae

English name: lupine

Description: Hairy herbaceous perennial from a woody taproot; leaves palmately compound, with five spatula-shaped leaflets; flowers blue to purple, pea-shaped, in racemes; fruits dry pods.

Habitat: Reported as being used by the Nez Percés but grows only in and west of the Cascade Mountains.

Plant parts used: seeds

Use category: Medicine

Specific uses: Medicine: to stimulate urination.

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lycoperdon* sp.**

Nez Perce name:

Plant family: Polyporaceae

English name: puffball

Description: Ground fungus with spherical fruiting bodies filled with spores.

Habitat: Widespread, in various habitats.

Plant parts used: spores

Use category: Medicine, spiritualism

Specific uses: Medicine: internal bleeding (spores in water); burns, sores, skin rashes (spore poultice); nosebleed (puffball pieces held to nose); soporific (spores rubbed on infants' eyelids and cheeks); styptic in veterinary treatments (puffball pieces held against cuts).
Spiritualism: mentioned in stories

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice).
Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.
Confection: root chewed

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red

ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent;

smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Polygonum phytolaccifolium* Meisner**

Nez Perce name:

Plant family: Polygonaceae

English name: fleecflower

Description: Herbaceous perennial from fleshy base; leaves long, narrow; flowers small, in branched clusters.

Habitat: Meadows and other moist places, subalpine to alpine; northwest US, California, and Nevada.

Plant parts used: roots, seeds

Use category: Food

Specific uses: Food: roots, seeds.

Special preparation: Food: roots were roasted or boiled. Seeds were eaten whole or ground into flour

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally);

venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet

hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Ranunculus eschscholtzii* Schlechtendal**

Nez Perce name:

Plant family: Ranunculaceae

English name: subalpine poppy buttercup

Description: Herbaceous perennial with a cluster of fleshy roots; leaves palmately lobed or dissected; flowers yellow.

Habitat: Montane meadows, rocky ridges, and talus at moderate to high elevations; western North America.

Plant parts used: roots, seeds

Use category: Food.

Special preparation: Food: boiling the roots and parching the seeds detoxifies them

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: tilitilitit

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: kál

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Ribes viscosissimum* Pursh**

Nez Perce name:

Plant family: Grossulariaceae

English name: sticky currant

Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.

Habitat: Wet or dry montane forests of inland western US and British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtlá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use category: Food

Specific uses: Food: young shoots for spring greens; fruits

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry.

Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as a soak).

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé mítip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease);

Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic:

boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trifolium longipes* Nuttall**

Nez Perce name:

Plant family: Fabaceae

English name: longstem clover

Description: Herbaceous perennial, leaves with three leaflets; small white to purple flowers in dense heads; fruits short pods.

Habitat: Valleys, meadows, and alpine slopes, montane; from the Rocky Mountains west to the Pacific Ocean.

Plant parts used: flower heads

Use category: Food

Specific uses: Food: flower heads eaten raw or cooked.

Special preparation: Beverage: the flower heads were brewed for tea.

***Trifolium macrocephalum* (Pursh) Poiret**

Nez Perce name:

Plant family: Fabaceae

English name: largeheaded clover

Description: Herbaceous perennial, leaves with five leaflets; one-one 1/4 inch pink or white flowers in large dense heads; fruits short pods.

Habitat: Dry shallow, rocky or sandy soils, often on exposed ridgetops, low to high elevations; east of the Cascade Mountains from central Washington to western Idaho and south to California and Nevada.

Plant parts used: flower heads

Use category: Food

Specific uses: Food: flower heads eaten raw or cooked.

Special preparation: Beverage: the flower heads were brewed for tea.

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium globulare Rydberg

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

Vaccinium membranaceum Douglas ex Torrey

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium scoparium Leiberg

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Vicia americana* Muhlenberg var. *truncata* (Nuttall) Brewer**

Nez Perce name:

Plant family: Fabaceae

English name: American vetch

Description: Trailing herbaceous perennial with pinnately-compound leaves with tendrils at the tips, purple flowers in loose long-stalked heads; fruits small pods.

Habitat: Meadows and similar habitats in lowlands to moderate elevations; North America from Alaska and the Pacific Coast south to Mexico, east to Ontario, West Virginia, and Missouri.

Plant parts used: foliage, seeds

Use category: Food, Spiritualism

Specific uses: Food: young foliage sometimes eaten cooked. Spiritualism: plant infusion as bathing solution in the sweathouse.

Special preparation: Food: foliage was boiled or baked

***Viola orbiculata* Geyer ex Holzinger**

Nez Perce name:

Plant family: Violaceae

English name: darkwoods violet

Description: Herbaceous perennial; leaves round with cordate base; flowers yellow; fruits capsules that open explosively.

Habitat: Streamsides and other moist places, low-moderate to high elevations; from British Columbia south to northern Oregon and east to Idaho and Montana.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Food: flowers. Medicine: influenza, colds, fevers, diuretic, expectorant, laxative, emetic (plant infusion); mumps (plant poultice)

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Brosnan, C. J., and H. Halverson. 1937. Tracing the Old Nez Perces Trail: The Nez Perces Trail in the Environs of Moscow and An Impressionistic Memory of an Historic Ride. Typescript with photographs. ca. 30 pp.

Summary: This work consists of two papers (one by Brosnan and one by Halverson), plus pages of black and white photographs with descriptions. The manuscripts document a history clasps retracing a portion of the Nez Perce trail from Lapwai, Idaho, north to Coeur d'Alene territory. It describes the trail's path through the Moscow, Idaho, area and documents historic landmarks. Halverson talks about the famous Moscow camas fields (at least portions of them were apparently still extant in 1937), the importance of camas in Nez Perce culture, and bows made of yew wood.

Methodology: Field excursion, oral history

Significance to Nez Perce ethnobotany: It is most interesting that there were still extensive camas fields on the east side of Moscow in 1937. These manuscripts are important in documenting a portion of the route of this important trail.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Brosnan, Cornelius J.

Author category: History

Background: Head, Department of American History, University of Idaho

Special interests: Northwest history

Methodology: Field excursion, oral history

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

Brown, Robert. 1868. On the vegetable products, used by the North-West American Indians as food and medicine, in the arts, and in superstitious rites. Bulletin of the Botanical Society (of Edinburgh) 9: 378-396.

Summary: During the 1800's, little was known about the plant foods of the Northwest American Indians. Brown's paper is an attempt to summarize Euroamerican understanding of plant use by the Indians in the 1860's. The paper reflects some long-pervasive Euroamerican misconceptions, e.g. that Plateau people "lived by hunting" and made little use of plant foods. The paper also reflects unfortunate (and inaccurate) ethnocentric judgments of indigenous cultures (e.g. Brown refers to the "miserable Digger Indians"). However, Brown does present one of the earliest summaries of indigenous plant use in the Northwest.

Methodology: Library research, observation

Significance to Nez Perce ethnobotany: This paper includes 42 plants that were also important in Nez Perce culture, and Brown specifically mentions use of sugar-bowls as a horse restorative.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Brown, Robert

Author category:

Background:

Special interests:

Methodology: Library research, observation

Context: popular interest

Specific Nez Perce plants discussed in this reference (42 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with “pinched” tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in “pudding.” Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten (“The natives reckon the root unfit for food.” Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat “seeds” on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat “seeds” on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots);

digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium ambiguum* (Nuttall) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: swale biscuitroot

Description: Herbaceous perennial from taproot usually with ball-shaped tuber(s); leaves divided into linear segments up to five-6 mm wide; flowers small, yellow, in umbrella-shaped clusters; fruits dry, flat, winged, in pairs.

Habitat: Open areas at low to moderate elevations, inland western US.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: tubers as a staple; flowers/young leaves as a seasoning. Medicine: colds, sore throat (young leaf/flower infusion).

Special preparation: Food: tubers were ground into flour

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles,

sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine:

stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Ribes niveum* Lindley**

Nez Perce name:

Plant family: Grossulariaceae

English name: snow gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers white; fruits red berries.

Habitat: Ravines and open rocky hillsides at low to moderate elevations; southeast Washington, northeast Oregon, northern Nevada, western Idaho.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer and eaten fresh or cooked.

Other plants used in similar ways: Food: *Ribes aureum*, Rice

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix scouleriana* Barratt**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streambanks, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology
Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).
Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups
Nutritional value: Shoots 42 kcal per 100g.
Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Taxus brevifolia Nuttall

Nez Perce name: **támqay**
Plant family: Taxaceae English name: Pacific yew
Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.
Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.
Plant parts used: wood, flesh around seeds Use category: Food, Technology, Spiritualism
Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).
Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease);
Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant
Nutritional value: Seeds toxic (but not the red fleshy cup around seed).
Other plants used in similar ways: Wood: *Philadelphus lewisii*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**
Plant family: Cupressaceae English name: western redcedar
Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.
Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.
Plant parts used: roots, inner bark, wood Use category: Food, Beverage, Technology, Medicine, Spiritualism
Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.
Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Bruchac, J. 1995. Native Plant Stories. Fulcrum Publishing. Golden, CO. 128 pp.

Summary: This nicely illustrated children's book contains plant legends of North and South American Indians. One story (pp. 39-42) explains the origin of bitterroot. The book's introduction, "Listening to the Plants," is a lovely description of Native American relationships with the plant world.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: The story about the origin of bitterroot reflects the importance of this food.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Bruchac, Joseph

Author category: Abenaki

Background: Native storyteller and writer

Special interests: Preservation of traditional stories

Methodology: Interviews, library research

Context: traditional Native American

Specific Nez Perce plants discussed in this reference (2 total)

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it

would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Brunton, B. B. 1998. Kootenai. Pp. 191-202 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: The focus of this chapter is on Kootenai political and social organization and structure. The subsistence section was written by Joanna Scherer and is very brief. Likewise, the subjects of technology and curing are covered by one paragraph each.

Methodology: Library research

Significance to Nez Perce ethnobotany: Information on plants is limited, but the plants mentioned are important in Nez Perce culture except for paperbark birch.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Brunton, Bill B.

Author category: Cultural Anthropology

Background: Department of Sociology-Anthropology, North Dakota State University, Fargo. Ph.D. Washington State University, Pullman 1974

Special interests: Shamanism, religion, intergroup relations

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (15 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Berberis aquifolium Pursh var. aquifolium

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten);

tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).
Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Nutritional value: Fruits high in vitamin C.
Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez

Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Picea engelmannii Parry

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

Pinus ponderosa Miller

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine

(mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Verbascum thapsus Linnaeus

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

Buan, C. M., and R. Lewis. 1991. *The First Oregonians*. Oregon Council for the Humanities. Portland, OR. 128 pp.

Summary: "The First Oregonians" is a collection of papers written by Native Americans and by Euroamericans who have worked closely with them. Chapter 2 (by Eugene Hunn) discusses the people of the Plateau, including the Nez Perces. This chapter describes the Plateau seasonal round, tools, housing, clothing, oral literature, languages, societal organization, and religion. Hunn stresses that root foods were the Plateau peoples' primary source of energy. Photographs illustrating some important plants include those on pages 11 (mat lodges), 17 (grinding woks, *Nuphar polysepalum*), 104 (gathering woks), and 117 (mat covered tipis). On page 8 is a diagram of the seasonal round, and p. 116 shows the trade network from the Dalles/Celilo Falls area. This diagram illustrates the Nez Perce trade links with The Dalles/Celilo Falls area as well as with the Great Plains.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The book discusses the importance of plants in Plateau culture as well as individual plant species.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Buan, Carolyn M.

Author category: Writer, editor

Background: Writing and Editing Services, Portland, Oregon

Special interests:

Methodology: Field and library research

Context:

Specific Nez Perce plants discussed in this reference (25 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated,

straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to “break” grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, “Indian-hemp”

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow “pods” in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, “cornhusk” bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Calochortus spp.

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for

sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium grayi (Coulter & Rose) Coulter & Rose

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

Nuphar polysepalum Engelmann

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds Use category: Food, Medicine
Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed);
rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in
horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites
(leaf poultice).
Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.
Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.
Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**
Plant family: Apiaceae English name: yampa, Indian-carrot
Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long
narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.
Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid
elevations; western North America from southern British Columbia to southern California and
Colorado.
Plant parts used: roots, seeds Use category: Food, Technology, Medicine
Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots
rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine:
diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion);
cough (root infusion, root chewed, or root smudge inhaled).
Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw,
roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were
dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes
were eaten dry or cooked into cereal
Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium,
0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.
Other plants used in similar ways: Food: *Perideridia bolanderi*.
Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is
very scarce in Nez Perce territory now because the habitat has been destroyed by
agriculture and domestic grazing.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**
Plant family: Rosaceae English name: bitter cherry
Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers
white, five petals, in small clusters, fruits small black cherries.
Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America
from British Columbia south.
Plant parts used: bark, fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of
suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of
bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints
for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large
(bark decoction).
Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they
were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes
pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark
used in their creation.
Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*,
Xerophyllum tenax

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sarcobatus vermiculatus (Hooker) Torrey

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Camden, J. 1999. Land before time. The Spokesman-Review, December 26, 1999: A1, A14

Summary: At the turning of the century from 1999 to 2000, this article goes back to about 999-1000 AD (according to the European calendar). Camden interviewed several prominent anthropologists and a representative of the Colville Confederated Tribes to present a picture of life in the interior Northwest 1000 years ago.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: The article mentions the importance of dried root foods and the matting used to roof houses

Implications for future management of Nez Perce National Historical Park lands:

About the author: Camden, Jim

Author category: Journalism

Background: Staff Writer, The Spokesman-Review, Spokane, WA

Special interests:

Methodology: Interviews, library research

Context: Popular interest

Specific Nez Perce plants discussed in this reference (none)

Chalfant, S. A. 1974. Aboriginal Territory of the Nez Perce Indians. Indian Claims Commission Defendant's Exhibit 24, Docket 175 : 133 pp. Garland Publishing Company, New York.

Summary: This document reviews the history of Euroamerican knowledge of the Nez Perce people, beginning with Lewis and Clark's Corps of Discovery. Discussed are traditional territory, bands, social and political organization, and cultural traditions including subsistence economy. Chalfant states that the skill and specialization in Nez Perce plant processing indicates great antiquity of the use of these plants. He mentions the most important camas and cous digging grounds as well as other important plant-gathering areas.

Methodology: Literature review and field investigations

Significance to Nez Perce ethnobotany: This review documents Nez Perce customs in the late 1800's.

Implications for future management of Nez Perce National Historical Park lands: Camas Prairie was an important area for camas, cous, and yampa. Other important camas digging areas were Weippe Prairie, Musselshell Meadows, and Moscow. Important areas for cous" were the river valleys and the area around Enterprise, Oregon. Yampa was also dug in the valleys. Important huckleberry-picking areas were along the Salmon River, south of Grangeville, Elk City, Pierce, Huckleberry Butte East of Clarkia, Musselshell Creek, Craig Mtn. above Slickpoo, and the Wallowa Valley.

About the author: Chalfant, Stuart A.

Author category: Ethnohistory

Background:

Special interests: Indian lands

Methodology: Literature review and field investigations

Context: academic

Specific Nez Perce plants discussed in this reference (19 total)

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorus.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium,
0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage)

decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Chance, D. 1991. Archaeological Findings and Nez Perce History at Spalding. Videotape recorded at Nez Perce National Historical Park. 120 min.

Summary: David Chance presented an orientation session for employees of Nez Perce National Historical Park interpreting results of archaeological work at and near Spalding, Idaho. Among the findings were three pithouse villages, hearths, and indirect evidence of cooking baskets.

Methodology: This discussion was based on field, laboratory, and library research.

Significance to Nez Perce ethnobotany: Chance's discussion of choosing locations for food caches is interesting. Although he does not mention specific plants the material on cooking baskets, milling stones, digging roots, and pit houses themselves relates to the importance of plants.

Implications for future management of Nez Perce National Historical Park lands: The sites discussed in this presentation are in Nez Perce National Historical Park; one village site is directly under the restrooms in the park area.

About the author: Chance, David

Author category: Archaeology

Background: University of Idaho, Moscow

Special interests:

Methodology: Field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (none)

Chatters, J. C. 1995. Population growth, climatic cooling, and the development of collector strategies on the southern Plateau, western North America. *Journal of World Prehistory* 9(3): 341-400.

Summary: In this interesting paper Chatters discusses changes in subsistence strategies as related to climatic change. The thesis is that increasing seasonality accompanying climatic cooling stimulated a change to semisedentism and food storage from the previous pattern of constant mobility and little storage. Since the subsistence change occurred 400 years after climatic cooling, Chatters suggests that prolonged selective pressures acted on differing subsistence strategies, with successful groups storing food and adopting a more sedentary way of life. Figure 2 summarizes culture chronologies that have been developed for the southern Plateau.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This change in subsistence strategy occurred in Nez Perce territory as well as the rest of the southern Columbia Plateau.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Chatters, James C.

Author category: Archaeology

Background: Owner, Applied Paleoscience, Richland, WA. Instructor Central Washington University; formerly with Battelle Pacific Northwest Laboratories; Ph.D. Washington State University, Pullman, Pullman

Special interests: Inland Northwest archaeology

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly “a single oz of dried root gave sufficient/nourishment for a full meal” (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and “planting” it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Chatters, J. C. 1998. Environment. Pp. 29-48 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution

Summary: The environment of the Columbia Plateau of course determined where the gathering-fishing-hunting indigenous peoples lived and traveled. This chapter discusses how the physical and biological environment relates to human activities in the region. Chatters discusses specific Habitat Types (fide Daubenmire) and some of the culturally important plants growing in them. The section on "Key Resource Environments" is particularly interesting (pp. 41-42). There is also a review of Columbia Plateau paleoenvironments and the influences of resource variation through time.

Methodology: Library research

Significance to Nez Perce ethnobotany: This discussion is an excellent summary of information about environmental factors important in understanding the cultural significance of plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Chatters, James C.

Author category: Archaeology

Background: Owner, Applied Paleoscience, Richland, WA. Instructor Central Washington University; formerly with Battelle Pacific Northwest Laboratories; Ph.D. Washington State University, Pullman, Pullman

Special interests: Inland Northwest archaeology

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (53 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and

conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried leaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Celtis reticulata Torrey

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

Cicuta douglasii (DeCandolle) Coulter & Rose

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clintonia uniflora* (Schultes) Kunth**

Nez Perce name:

Plant family: Liliaceae

English name: beadlily

Description: Low herbaceous perennial from creeping succulent rhizomes; leaves two or three, rather succulent, with veins paralleling the margins; flowers usually one or two, white, with 6 "petals;" fruits blue berries.

Habitat: Moist spots in coniferous forests from the foothills to moderate elevations in the mountains; northwestern US, California, and B.C. and southwest Alberta.

Plant parts used: fruits

Use category: Technology, Medicine

Specific uses: Technology: fruits for blue coloring. Medicine: kidney stones (rhizome juice) wounds (plant poultice); eyewash (juice)

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth

recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Hesperostipa comata* (Trinius & Ruprecht) Barkworth**

Nez Perce name:

Plant family: Poaceae

English name: needle-and-thread

Description: Herbaceous perennial cespitose grass.

Habitat: Dry grasslands, shrub-steppe, low to high elevations; western and central North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: grass mats.

Special preparation: Technology: bundles of stems used with other grasses as warps in matting.

Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Elymus elymoides*.

Comments: Formerly called *Stipa comata*.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red

coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat

lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qáppqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken

bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative

(wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Ribes cereum* Douglas**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Sarcobatus vermiculatus (Hooker) Torrey

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tragopogon dubius* Scopoli**

Nez Perce name:

Plant family: Asteraceae

English name: goatsbeard, oyster plant

Description: Biennial from a fleshy taproot, with milky sap and long pointed grass-like leaves; flowers yellow, in a dense head; fruits dry, with a long-stalked feathery plum on top.

Habitat: Introduced from Eurasia; weedy in wet to dry habitats at low to high elevations.

Plant parts used: root, seed fluff

Use category: Food, Technology, Confection

Specific uses: Food: roots. Technology: seed fluff to stuff pillows. Confection: milky sap chewed.

Special preparation: Confection: for chewing, stems were broken off at the base. The milky sap was allowed to dry and rolled into a ball

Nutritional value: Roots 2.9% protein, 0.6% fat, 18% carbohydrates. Per 100 g: 11 mg vitamin C, 47 mg calcium, 1.5 mg iron, 380 mg potassium, 66 mg phosphorous.

Comments: Roots are rather bitter and probably not a favored food.

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply.
Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Churchill, T. E. 1983. Inner bark Utilization: A Nez Perce Example. M.A. Thesis, Oregon State University, Corvallis, OR. 103 pp.

Summary: Churchill's thesis is primarily a review of literature concerning indigenous peoples' use of inner bark in the Northwest United States and adjacent Canada, focusing on the Nez Perce. He discusses how scars resulting from human use of bark differ from those caused by other agents (e.g. fire, animals). Churchill also measured scars on 65 ponderosa pines in Nez Perce territory of northeastern Oregon and had 16 of these dated through dendrochronological analysis.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The literature review is extensive and fits Nez Perce bark use into a general context. Churchill's study also provides documentation of bark peeling by the Nez Perce. Churchill mentions 33 other plants used by the Nez Percés in addition to ponderosa pine.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Churchill, Thomas E.

Author category: Anthropology

Background: M.A. Oregon State University 1983

Special interests: Ethnobotany

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (55 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium geyeri* S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed.

Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Calochortus spp.

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Celtis reticulata Torrey

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Cirsium scariosum* Nuttall**

Nez Perce name: **títux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tips; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Festuca idahoensis* Elmer**

Nez Perce name:

Plant family: Poaceae

English name: Idaho fescue

Description: Cespitose perennial grass with very thin usually bluish-green leaves and awned grain fruits.

Habitat: Grasslands, steppe, and montane meadows, low to high elevations; B.C. and Alberta south to the Sierra Nevada and east to Utah and Colorado.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: food preparation

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Frasera fastigiata* (Pursh) Heller**

Nez Perce name:

Plant family: Gentianaceae

English name: clustered frasera

Description: Tall succulent herbaceous perennial with whorled leaves, a dense spike of blue flowers with four petals.

Habitat: Moist meadows and moist open forests, lowlands to moderate elevations; Blue Mountains of Oregon and Washington, central and northeast Idaho.

Plant parts used: roots, stems, and leaves

Use category: Food

Specific uses: Food: supplementary fresh vegetable.

Special preparation: Food: roots were dug in summer and boiled or baked, sometimes overnight in pit oven (they contain inulin). Stems and leaves were gathered in June-July and eaten fresh.

Other plants used in similar ways: Food: *Cirsium scariosum*.

Comments: In Nez Perce country this plant occurred on plateau wet prairie meadows but most of the habitat was lost to farming.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red

coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian

Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **ti'álam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: **cí ci ta**

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk
Nutritional value: 7% protein.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.
Comments: Especially important source of vitamin C in spring.

***Mentha arvensis* Linnaeus**

Nez Perce name:
Plant family: Lamiaceae English name: field mint
Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.
Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.
Plant parts used: stems/leaves
Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.
Special preparation: Food: mint greens were sometimes warmed over a fire before eating
Nutritional value: Good source of calcium, iron, magnesium

***Penstemon wilcoxii* Rydberg**

Nez Perce name: **kitimkitim**
Plant family: Scrophulariaceae English name: penstemon
Description: Herbaceous perennial with long-ovate leaves in pairs, leathery; flowers blue-purple.
Habitat: Open places, slopes, banks, and forests, montane foothills to moderate elevations; northern and central Idaho, northeast Oregon, northwest Montana.
Plant parts used: roots Use category: Medicine
Specific uses: Medicine: sores (root chewed, root poultice, or root infusion externally)

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**
Plant family: Apiaceae English name: yampa, Indian-carrot
Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.
Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.
Plant parts used: roots, seeds Use category: Food, Technology, Medicine
Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).
Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium,
0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage)

decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: tíms

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.
Plant parts used: wood, bark, fruits Use category: Food, Technology, Medicine, Cosmetic
Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."
Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained
Nutritional value: Fruits 30 mg vitamin C per 100g.
Other plants used in similar ways: Food: *Prunus emarginata*.
Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps
Plant family: Pinaceae English name: Douglas-fir
Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.
Habitat: Mesic to dry forests, lowlands to high elevations; western North America.
Plant parts used: branches, boughs, decayed wood
Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.
Special preparation: Technology: for a canoe the trunk was burned out and shaped
Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.
Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

Ribes cereum Douglas

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa nutkana Presl

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to

prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátocx**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.
Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch
Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.
Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**
Plant family: Ericaceae English name: globe huckleberry
Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.
Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.
Plant parts used: roots, stems, fruits Use category: Food, Medicine
Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).
Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)
Nutritional value: Fruits rich in vitamin C.
Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.
Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Percés preferred to collect these berries in the subalpine fir zone.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**
Plant family: Ericaceae English name: big huckleberry
Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.
Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.
Plant parts used: fruits Use category: Food, Technology
Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).
Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)
Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.
Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.
Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**
Plant family: Ericaceae English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

Clark, E.E. 1960. Indian Thanksgiving in the Pacific Northwest. Oregon Historical Quarterly 61: 437-456.

Summary: For thousands of years Northwest American Indians have held thanksgiving ceremonies such as the First Roots and First Fruits Feasts. This paper cites the story of creation according to one Walla Walla version in which the Great Spirit transformed a frog into a man who took a beaver for his wife. The beaver wife found food in the roots of several plants and the man gave thanks to the Great Spirit for these root foods and for fish and animal foods he discovered. Clark suggests this story may represent the origins of indigenous thanksgiving celebrations. The article discusses several Plateau stories including a Yakama story about plant spirits and a Wasco story about the origin of the First Roots celebration.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: The importance of Nez Perce food plants was celebrated in their traditional First Roots and First Fruits thanksgiving ceremonies.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Clark, Ella E.

Author category: Writer

Background: Professor of English, Washington State University, Pullman, 1957-1961; high school teacher; M.A. Northwestern University 1927, B.A. 1921

Special interests: Indian stories, Pacific Northwest

Methodology: Library research

Context: popular nonfiction

Specific Nez Perce plants discussed in this reference (9 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Cockle, R. 1998. Instructor weaves present, past and future. *The Sunday Oregonian* September 27, 1998: D6.

Summary: Pat Gold is a Wasco weaver who has been teaching traditional weaving techniques for the past several years. As an adult she learned the weaving techniques characteristic of her Native people, and she has a thorough knowledge of the plants used. This article focuses on a workshop in basketmaking that Gold led as part of the educational program of the Crow's Shadow Institute near Pendleton, Oregon.

Methodology: Interview

Significance to Nez Perce ethnobotany: Wasco people used much the same plants in their basketry as Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Cockle, Richard

Author category: Journalism

Background: Correspondent, *The Oregonian*

Special interests:

Methodology: Interview

Context:

Specific Nez Perce plants discussed in this reference (5 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Carex* spp.**

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Typha latifolia Linnaeus

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Coffey, T. 1993. The History and Folklore of North American Wildflowers. Houghton Mifflin Company, Boston, MA. 356 pp.

Summary: Coffey's book is an encyclopedia of plants and how they have been used by American Indians. The author summarizes information on medicinal, food, and technological uses and includes anecdotes about particular plants. Some plants are illustrated with excellent line drawings.

Methodology: Library research

Significance to Nez Perce ethnobotany: The book includes 64 plants known to be important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Coffey, Timothy

Author category: Ethnobotany

Background:

Special interests:

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (69 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Angelica* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).
Comments: Plant can be confused with water-hemlock.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, haffing and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, haffing, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic
Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).
Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.
Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed.
Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horses nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

***Delphinium* spp.**

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection. Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorus.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with “pinched” tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in “pudding.” Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten (“The natives reckon the root unfit for food.” Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat “seeds” on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat “seeds” on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath); body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.

Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin.
Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, B.C.

Plant parts used: root, fruits Use category: Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.
Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**
Plant family: Apiaceae English name: fernleaf lomatium
Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.
Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.
Plant parts used: root, shoots, mature foliage Use category: Food, Technology, Medicine, Spiritualism
Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food. Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.
Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten. Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.
Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.
Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**
Plant family: Araceae English name: skunk-cabbage
Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.
Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.
Plant parts used: rhizome and leaves Use category: Technology, Medicine, Spiritualism
Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.
Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Medicago sativa* Linnaeus**

Nez Perce name: **?alpa?álpa**
Plant family: Fabaceae English name: alfalfa

Description: Herbaceous perennial, leaves compound, with three oblong leaflets, flowers tiny, pea-like, purple (sometimes white, pink, or yellow), fruits tiny coiled pods.

Habitat: European species widely naturalized in moist-mesic places (cultivated).

Plant parts used: foliage

Use category: Technology

Specific uses: Technology: plants to line pit-roasting ovens

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Mimulus guttatus* DeCandolle**

Nez Perce name:

Plant family: Scrophulariaceae

English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often witherred dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)

Nutritional value: 83 mg vitamin C per 100g

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*istsis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix. Confection: root chewed

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils,

deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth).

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.

Plant parts used: whole plants, leaves

Use category: Food, Medicine

Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)

Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.

Comments: peppery taste; introduced plant.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rumex acetosella Linnaeus

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

Rumex venosus Pursh

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

Sagittaria latifolia Willdenow

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Streptopus roseus* Michaux**

Nez Perce name:

Plant family: Liliaceae

English name: twisted-stalk

Description: Herbaceous perennial from rhizomes; leaves ovate, parallel-veined, shiny, bases clasping the stem; flowers white, yellowish, or rose, sometimes streaked or spotted; fruits red berries.

Habitat: Streambanks, moist woods, usually above 3000 ft. elevations; western boreal North America.

Plant parts used: fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not a favorite food. Medicine: tonic, stomach ailments (plant infusion); internal pains (rhizome decoction). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Trifolium pratense* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: red clover

Description: Herbaceous perennial from a taproot; leaves with three leaflets; flowers pink to purple, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread at low to high elevations.

Plant parts used: flower heads

Use category: Medicine

Specific uses: Food: flower heads eaten raw or cooked. Medicine: treating stomach cancer (flower head infusion)

***Trifolium repens* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: white Dutch clover

Description: Herbaceous perennial from creeping rhizomes; leaves with three small leaflets; flowers white, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread in moist places at low to high elevations.

Plant parts used: flower heads

Use category: Medicine

Specific uses: Food: flower heads eaten raw or cooked

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.
Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch
Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.
Comments: Rich in vitamins and minerals.

Vaccinium spp.

Nez Perce name: **cemítik**
Plant family: Ericaceae English name: huckleberries, blueberries
Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.
Habitat: Montane.
Plant parts used: fruits Use category: Food, Beverage
Specific uses: Food: fruits.
Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.
Nutritional value: Fruits 7-16% mg vitamin C.
Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Valeriana edulis Nuttall ex Torrey & Gray

Nez Perce name: **ku ye**
Plant family: Valerianaceae English name: tobaccoroot, valerian
Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.
Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.
Plant parts used: root, leaves Use category: Food, Medicine
Specific uses: Food: roots an occasional food. Medicine: sedative (roots).
Special preparation: Food: long slow cooking detoxifies the roots.
Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Veratrum spp.

Nez Perce name:
Plant family: Liliaceae English name: false hellebore, corn-lily
Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.
Habitat: Wet places; North America.
Plant parts used: toxic Use category: Medicine
Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

Verbascum thapsus Linnaeus

Nez Perce name:
Plant family: Scrophulariaceae English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Veronica americana* Schweinitz**

Nez Perce name:

Plant family: Scrophulariaceae

English name: American brooklime

Description: Sprawling herbaceous perennial with glabrous short-stalked leaves in pairs; flowers small, pale blue, in racemes, fruits small, heart-shaped.

Habitat: In water of ditches, marshes, ponds, seeps, and quiet streams of lowlands to moderate elevations; North America.

Plant parts used: whole plant

Use category: Medicine

Specific uses: Medicine: emetic

***Veronica anagallis-aquatica* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: water pimpernel

Description: Sprawling herbaceous perennial with glabrous sessile leaves in pairs; flowers small, pale blue, in racemes, fruits small, heart-shaped.

Habitat: Aquatic; introduced from Eurasia and very widespread at low to moderate elevations in North and South America.

Plant parts used: stems/leaves

Use category: Food

Specific uses: Food: fresh greens

***Viola* spp.**

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: **tá ko**

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Conn, R. G. 1985. The Chap C. Dunning Collection. Material Culture of the Plateau Indians. August 8 - December 29 1985 [Exhibit Catalogue]. Eastern Washington State Historical Society and Cheney Cowles Memorial Museum. Spokane, WA. 14 pp.

Summary: Chap C. Dunning assembled a collection of Columbia Plateau Native art between 1920 and 1960, of objects made in the late 1800's and early 1900's. This publication is the catalogue for a 1985 exhibit of the collection. Dunning early recognized the artistry of Indian technology and was close friends with many Plateau people. The collection includes many baskets, including one of the largest existing cornhusk bag collections. The authors of the catalogue describe four time periods of cornhusk bag construction by the materials used but do not include the period when only native materials were used and colored with plant dyes.

Methodology: Museum and library research

Significance to Nez Perce ethnobotany: Nez Perce basketry is included.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Conn, Richard G.

Author category: Artistic design, anthropology

Background: Curator of Native Arts, Denver Art Museum. Formerly Chief of Human History, Manitoba Museum of Man and Nature, Director, Eastern Washington State Historical Society Museum. M.A. Anthropology, University of Washington

Special interests: North American Indians

Methodology: Museum and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (5 total)

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Conn, R.G. 1986. A Persistent Vision: Art of the Reservation Days. Denver Art Museum. University of Washington Press, Seattle. 190 pp.

Summary: This book catalogues the L.D. and Ruth Bax collection of Native American Art at the Denver Art Museum. The collection focuses on art of the Plains and interior West. Plates 177 and 178 are Nez Perce flat bags.

Methodology: Museum and library research

Significance to Nez Perce ethnobotany: Two Nez Perce cornhusk bags are included.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Conn, Richard G.

Author category: Artistic design, anthropology

Background: Curator of Native Arts, Denver Art Museum. Formerly Chief of Human History, Manitoba Museum of Man and Nature, Director, Eastern Washington State Historical Society Museum. M.A. Anthropology, University of Washington

Special interests: North American Indians

Methodology: Museum and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Conn, R. G., and M. D. Schlick. 1998. Basketry. Pp. 600-610 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: This chapter reviews basketry styles and techniques characteristic of the Plateau region by time period (archaeological record, ethnographic times, 1990's). Some of the most important plant materials for basketmaking are mentioned, and black and white photographs illustrate characteristic Plateau basketry styles (e.g. Fig. 1, p. 601; Figs. 2-3, p. 602; Fig. 5, p. 605; Fig. 7, p.607).

Methodology: Library research

Significance to Nez Perce ethnobotany: Nez Perce basketry styles are included in this review, and most of the plant materials mentioned were used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Conn, Richard G.

Author category: Artistic design, anthropology

Background: Curator of Native Arts, Denver Art Museum. Formerly Chief of Human History, Manitoba Museum of Man and Nature, Director, Eastern Washington State Historical Society Museum. M.A. Anthropology, University of Washington

Special interests: North American Indians

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (12 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Coville, F.V. 1897. Notes on the plants used by the Klamath Indians of Oregon. Contributions from the U.S. National Herbarium 5(2): 87-108.

Summary: The Klamath Indians are on the southwestern fringe of the Plateau culture area, and Coville's paper is one of the earlier ethnobotanical studies in the Northwest U.S. Coville describes each plant and its use by the Klamath people in the late 1800's.

Methodology: Interviews

Significance to Nez Perce ethnobotany: The Klamath people used many of the same plants as the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Coville, Frederick V.

Author category: Botany

Background: Director, US National Herbarium, Smithsonian Institution

Special interests: botanical exploration, ethnobotany

Methodology: Interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (54 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses);

permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemfolium*, *Urtica dioica*

***Arctostaphylos nevadensis* A. Gray**

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: leaves, berries

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cercocarpus ledifolius Nuttall

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

Chenopodium spp.

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing

weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of

bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

Ribes aureum Pursh

Nez Perce name: kál

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Ribes cereum Douglas

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Ribes oxycanthoides Linnaeus

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

Rosa spp.

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium scoparium Leiberg

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Valeriana edulis Nuttall ex Torrey & Gray

Nez Perce name: ku ye

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Coville, F. V. 1902. Wokas, a primitive food of the Klamath Indians. Report on the Condition and Progress of the U.S. National Museum, Smithsonian Institution 1902: 725-739. Washington, D.C.

Summary: Summarizes the collecting and processing of wokas by the Klamath people, including various grades of seed and processing methods for each. Plates 1-13 are a very interesting series of photographs documenting wokas gathering and processing at the beginning of the 20th century.

Methodology: Field research, interviews

Significance to Nez Perce ethnobotany: The Nez Percés enjoyed eating wokas and obtained it through trade.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Coville, Frederick V.

Author category: Botany

Background: Director, US National Herbarium, Smithsonian Institution

Special interests: botanical exploration, ethnobotany

Methodology: Field research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for

twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Coville, F.V. 1904. Plants used in Basketry. Pp. 19-43 in O.T. Mason. Indian Basketry; Studies in a Textile Art Without Machinery : Doubleday, Page, and Co., New York.

Summary: In the late 1800's and early 1900's Native American groups retained many basketry traditions which have subsequently been obscured. Coville's paper lists plants used in Native American basketry during this time period with a description of how the plant was used. Several plant illustrations are included.

Methodology: Library and museum research

Significance to Nez Perce ethnobotany: This paper includes 24 plants documented elsewhere to have been important to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Coville, Frederick V.

Author category: Botany

Background: Director, US National Herbarium, Smithsonian Institution

Special interests: botanical exploration, ethnobotany

Methodology: Library and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (24 total)

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Alnus rhombifolia* Nuttall**

Nez Perce name:

Plant family: Betulaceae

English name: white alder

Description: Tree up to 60 ft tall, bark silvery-white, leaves serrate, fruits small dry, wingless, in small cones.

Habitat: Along permanent streams at low to high elevations of inland Northwest US, California, British Columbia, Baja California.

Plant parts used: bark, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: stimulating circulation, treating tuberculosis or lymphatic ailments (bark decoction); skin inflammations (leaves). Spiritualism: stems for incense

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia ludoviciana Nuttall var. ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Equisetum palustre* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: marsh horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to persistent black teeth with white margins; reproducing by spores borne in cones.

Habitat: Wet places of the lowlands to mid-elevations in the mountains; circumboreal and south to south Washington, northern Idaho, northwest Montana, Nevada, and Pennsylvania.

Plant parts used: rhizomes, stems

Use category: Food, Technology

Specific uses: Technology: stems for scouring, sandpaper; rhizomes for basketry imbrication (black iridescent color). Medicine: diuretic (stem infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum laevigatum*

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in

horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry.

Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as soak)

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for

insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.
Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Cox, R.L. 1957. The Columbia River : or, scenes and adventures during a residence of six years on the western side of the Rocky Mountains among various tribes of Indians hitherto unknown; together with a journey across the American continent. University of Oklahoma Press, Norman. 396 pp.

Summary: Ross Cox traveled up and down the Columbia River during the 1800's for the Pacific Fur Company. He recorded in his journals observations about the lives of American Indian groups including the Nez Perces. Since his journeys were within a few years of Lewis and Clark's Voyage of Discovery, his observations reflect traditional Nez Perce customs relatively little contaminated by Euroamerican influences (except the horses).

Methodology: Travels and explorations, talking and trading with Indians

Significance to Nez Perce ethnobotany: Cox's observations of plant use in Nez Perce culture, while limited, is a valuable adjunct to Lewis and Clark's record.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Cox, Ross A.

Author category: Exploration

Background: Pacific Fur Company

Special interests: Fur trade with Northwest Native Americans

Methodology: Field contacts

Context: Observation

Specific Nez Perce plants discussed in this reference (12 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Bryoria fremontii (Tuckerman) Brodo & D. Hawksworth

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with

other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Cox, T. R. 1999. Charles A. Geyer, Pioneer Botanist of Upper Oregon. Idaho Yesterdays 43(1): 11-32.

Summary: This paper is an account of Charles Geyer's 1843-1844 botanical explorations in the Northwest United States, including excerpts from Geyer's journals. Geyer spent time with several different groups of Columbia Plateau Indians, including the Coeur d'Alene, the Spokane, the Colville, the Walla Walla, and the Nez Perce. Cox's paper outlines Geyer's travels, his botanical notes and collections, and his dealings with the Indians.

Methodology: Library research

Significance to Nez Perce ethnobotany: Geyer recorded indigenous uses of plants, and some of these notes are quoted in this paper.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Cox, Thomas R.

Author category: History

Background: McCammon, ID. Retired from the Department of History, San Diego State University; BS Oregon State University, Corvallis

Special interests: History of botanical exploration

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (18 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Cercocarpus montanus Rafinesque var. glaber (S. Watson) Martin

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: birchleaf mountain-mahogany

Description: Large shrub or small tree with gnarled growth form; leaves evergreen, broadest near the tip, shiny dark green above, pale beneath, margins toothed; flowers small, without petals, in axillary clusters; fruits small sharp achenes with plume-like persistent style.

Habitat: On rocky hilltops and ridges in dry steppe, canyons, and ridges; inland western North America from central Oregon south and east to the Rocky Mountains and central Mexico.

Plant parts used: wood

Use category: Technology, Medicine

Specific uses: Technology: wood/branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring. Medicine: respiratory problems (bark decoction).

Other plants used in similar ways: Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*

Clematis hirsutissima Pursh

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for

dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Cressman, L. S. 1981. *The Sandal and the Cave: The Indians of Oregon*. Oregon State University Press. Corvallis, OR. 81 pp.

Summary: Cressman's book presents a review of the customs and traditions of Oregon Indians, including the Nez Perces. The book discusses the natural environment, the various Indian groups, and their traditional clothing, shelter, settlement patterns, social relations, and subsistence. Pp. 50-52 summarize traditional Nez Perce subsistence patterns.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The book includes the Oregon Nez Perces and compares their traditions with those of adjacent groups.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Cressman, Luther S.

Author category: Archaeology

Background: Professor of Anthropology, University of Oregon; "Father of Oregon Archaeology" and discoverer of ancient Fort Rock Cave sagebrush sandals

Special interests: Early inhabitants of Oregon, especially the northern Great Basin; multidisciplinary archaeological interpretation

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried

bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kcal, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rubus ursinus Chamisso & Schlechtendal

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Curtis, E. S. 1911. The North American Indian. Plimpton Press. Norwood, MA. 227 pp.

Summary: In the first half of this volume (pp. 1-76) of his series on the American Indians, Curtis summarizes the way the Nez Perce people lived shortly after the beginning of the 20th century, with comments on the Walla Walla, Umatilla, and Cayuse peoples. Curtis' treatment focuses on the flight of 1877 but includes a summary of subsistence. His photographs are primarily portraits but also include a wonderful picture of a Nez Perce dugout canoe on the Clearwater River (opposite p. 46) and a tule mat tipi (opposite p. 50) showing both twined and sewn mats. In the background of the sweat lodge photo opposite p. 42 it is evident that cattle have already terraced the hills by 1910. The book's Appendix summarizes Nez Perce culture and that of several other groups.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This book contains detailed information about the importance of plants in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Curtis, Edward S.

Author category: Photography, Art, Ethnography

Background: Moved to Seattle with his family when he was 19, opened photographic studio; expeditions to Alaska, Montana, Southwest US; letter of introduction from TR, financed by JP Morgan fieldwork in western US for 5 years

Special interests: Saw that traditions of western US people were disappearing and strove to record them through photos and text

Methodology: Field and library research

Context: Native Americans in western US presented as they may have been pre-contact; photos were sometimes staged and/or "enhanced" to remove traces of Euroamerican influence

Specific Nez Perce plants discussed in this reference (14 total)

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Apocynum cannabinum* Linnaeus**

Nez Perce name: qeemu

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled

rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried

for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Cutright, P. R. 1969. Lewis and Clark: Pioneering Naturalists. University of Illinois Press. Urbana, IL. 506 pp.

Summary: This book is an analysis of Lewis' and Clark's natural history observations during the Voyage of Discovery, including plant and animal species discovered that were previously unknown to science. The book includes discussion of Nez Perce plant use, including the famous first encounter between Clark's party and the Nez Perce people (p. 209), roasting camas (pp. 215-216), digging and eating kouse (pp. 283-284), tree lichen (p. 286), the risks of Corps members digging roots (e.g. water hemlock) (p. 292), and treatment of back pain (p. 294). Appendix A is a botanical catalogue including Comments on indigenous use.

Methodology: Library research

Significance to Nez Perce ethnobotany: The information on Nez Perce plant use presented in the book provides insight on the importance of plants in Nez Perce culture at the time of first direct contact between Nez Perce people and Euroamericans.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Cutright, Paul R.

Author category: Writer, Biology

Background: Professor of Biology, Beaver College, Glenside, PA 1933-1964; Professor of Biology, Geneva College, Beaver Falls, PA, 1923-1929

Special interests: History of biological exploration; pioneering naturalists

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (20 total)

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or

fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus elegans* Pursh**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: cat's-ear

Description: Small herbaceous perennial from a bulb, with one flat narrow basal leaf, flowers with three white petals usually with a purple crescent.

Habitat: Grassy slopes and open forests in the mountains; Northwest US and northern California.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer and boiled.

Other plants used in similar ways: Food: *Triteleia grandiflora*.

Comments: Bulbs are small and deep in the soil.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: péqiy

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?ístis

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: cawítx

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of

stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Thuja plicata Donn ex D. Don

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood,

for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Darby, M. 1996. Wapato for the People: An Ecological Approach to Understanding the Native American Use of *Sagittaria latifolia* on the Lower Columbia River. M.A. thesis, Portland State University. Portland, OR. 126 pp.

Summary: In this thesis, Darby presents a model of wapato tuber productivity in one area of the lower Columbia River. She concludes that one year's minimal total tuber production would feed more than 18,000 people, ten times the highest estimated population for that area. Therefore, gathering *Sagittaria* tubers is cost-effective in terms of energy.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The Nez Percés enjoyed eating wapato and obtained it through trade.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Darby, Melissa

Author category: Anthropology

Background: M.A. Portland State University, OR, 1996

Special interests: Ethnobotany

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

Daubenmire, R. F. 1975. An ecological life-history of *Lewisia rediviva* (Portulacaceae). *Syesis* 8: 9-23.

Summary: This paper is based on Daubenmire's study of the ecology, discovery, nomenclature, taxonomy, and food and medicinal value of bitterroot. Collection and preparation of bitterroot and its nutritional and medicinal value are discussed on pages 10-11. Figure 3 is a distribution map illustrating the absence of the plant from most of Nez Perce territory.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: Bitterroot was highly valued in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Daubenmire, Rexford F.

Author category: Plant ecology

Background: Was Emeritus Professor Department of Botany Washington State University, Pullman 1945-1977; Ph.D. University of Minnesota 1935; MS University of Colorado 1932; BS Butler University 1930

Special interests: Plant ecology, especially habitat typing

Methodology: Interviews, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

DeSanto, J. 1993. Bitterroot. LERE Press. Babb, MT. 120 pp.

Summary: "Bitterroot" is a delightful compilation of information about bitterroot: its important to Indians, its collection and description by the Corps of Discovery, and other interesting information. The author discusses Lewis and Clark's relationship with the Nez Perce Indians, though he does not mention them by name. The distribution map on page 50 illustrates that the plant apparently does not grow in most of traditional Nez Perce territory. Appendix I discusses ethnobotany of the Lewis and Clark expedition with reference to root foods. DeSanto's book contains a few inaccuracies but is fun to read.

Methodology: Library and field research

Significance to Nez Perce ethnobotany: In addition to bitterroot, the book mentions 26 other plants important to Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: DeSanto, Jerry P.

Author category: Business Management, nature studies

Background: Associate Provost for Information Resources, University of Scranton; BS, MBA University of Scranton

Special interests: Native American plant use

Methodology: Library and field research

Context: popular scientific

Specific Nez Perce plants discussed in this reference (26 total)

***Allium tolmiei* (Hooker) Baker ex S. Watson**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Small strong-scented herbaceous perennials from bulbs; leaves broad, strap-like; flowers pink, in dense umbrella-shaped clusters; flowering stalks broad, flat, tending to lie on the ground.

Habitat: Dry soils at various elevations from southeast from Washington and western Idaho to Northeast California.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: raw or cooked.

Special preparation: Food: bulbs were dug during summer; dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles,

reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Calochortus spp.

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez

Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked. Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat

(pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (**qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mittip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction);

eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

DeVoto, B. 1953. The Journals of Lewis and Clark. Houghton Mifflin Company. Boston, MA. 504 pp.

Summary: DeVoto's book is a condensation of Lewis and Clark's journals. Pages 240-250 summarize the Corps of discovery's westward passage through Nez Perce territory during September and October of 1805. Nez Perce plant uses mentioned in these pages include mat lodges, sitting mats, nets, willow fish traps, and a willow bark archery target. On page 386 there is a description of using pine boughs in a pit oven to roast bear. Pages 370-417 describe the Corps of Discovery's stay with the Nez Perce people during May and June of 1806 and the eastbound ascent of the Bitterroot Mountains.

Methodology: Library research

Significance to Nez Perce ethnobotany: The information presented about Nez Perce plant use reflects the importance of plants at the time of first direct Euroamerican contact.

Implications for future management of Nez Perce National Historical Park lands:

About the author: DeVoto, Bernard

Author category: History, Writing

Background: Pulitzer Prize History, wrote for Harper's, Saturday Review of Literature; Assistant Professor Northwestern University; Instructor, Lecturer Harvard University, Editor Harvard Graduates" Magazine. Degree from Harvard University 1920; attended University of Utah 1914-1915

Special interests: History, Exposition

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (9 total)

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and

conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (**qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Dodge, J. R. 1870. Food products of the North American Indians. U.S. Commerce and Agriculture Report 1870: 404-428.

Summary: Dodge's paper discusses selected Native American food plants, including root foods used by the Nez Percés. The introduction discusses subsistence in very judgmental terms that unfortunately were common in the late 1800's.

Methodology: Library research

Significance to Nez Perce ethnobotany: Four root foods are specifically referenced to the Nez Percés; others were also used by them.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Dodge, J R.

Author category:

Background:

Special interests:

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilílx**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes

dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Glycyrrhiza lepidota Pursh

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.

Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (**qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Microseris nutans* (Geyer) Schultz-Bipontinus**

Nez Perce name:

Plant family: Asteraceae

English name: nodding microseris

Description: Small herbaceous perennial from fleshy taproot, with milky juice, leaves long and narrow, flowers in yellow heads, dandelion-like, fruits with narrow scales at the top.

Habitat: Moist open places from moderate to high elevations, western interior US and British Columbia.

Plant parts used: root

Use category: Food

Specific uses: Food: roots

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Douglas, D. 1914. Journal Kept by David Douglas During his Travels in North America 1823-1827. William Wesley & Son. London. 260 pp.

Summary: Douglas' journal records his botanical explorations. On pages 199-202 are observations of Indians along the lower Snake River.

Methodology: Exploration and observation

Significance to Nez Perce ethnobotany: Douglas spent limited time in Nez Perce territory but did make some observations about Nez Perce plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Douglas, David

Author category: Botany, exploration

Background: Commissioned by Horticultural Society of London to find plants suitable for cultivation in the British Isles; spent 1825-1827 and 1830 in the Northwest US; recognized many plant species previously unknown to science; grew up in Scotland

Special interests: Biological exploration; adaptability of native North American plants to cultivation in Europe

Methodology: Exploration and observation

Context: scientific/botanical exploration

Specific Nez Perce plants discussed in this reference (6 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Frasera fastigiata* (Pursh) Heller**

Nez Perce name:

Plant family: Gentianaceae English name: clustered frasera
Description: Tall succulent herbaceous perennial with whorled leaves, a dense spike of blue flowers with four petals.
Habitat: Moist meadows and moist open forests, lowlands to moderate elevations; Blue Mountains of Oregon and Washington, central and northeast Idaho.
Plant parts used: roots, stems, and leaves Use category: Food
Specific uses: Food: supplementary fresh vegetable.
Special preparation: Food: roots were dug in summer and boiled or baked, sometimes overnight in pit oven (they contain inulin). Stems and leaves were gathered in June-July and eaten fresh.
Other plants used in similar ways: Food: *Cirsium scariosum*.
Comments: In Nez Perce country this plant occurred on plateau wet prairie meadows but most of the habitat was lost to farming.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**
Plant family: Liliaceae English name: yellowbells
Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.
Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.
Plant parts used: bulbs Use category: Food
Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.
Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry
Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.
Other plants used in similar ways: Food: *Erythronium grandiflorum*.
Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lomatium* spp.**

Nez Perce name:
Plant family: Apiaceae English name: lomatium, bitterroot, desert-parsley
Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.
Habitat: Dry and mesic areas of western North America.
Plant parts used: roots Use category: Food.
Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.
Comments: Digging roots was one of the few times the earth was disturbed.

***Ribes* spp.**

Nez Perce name:
Plant family: Grossulariaceae English name: currants and gooseberries
Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.
Habitat: Woods, riparian areas, washes, moist places, various elevations.
Plant parts used: fruits Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Downing, G. R., and L. S. Furniss. 1978. Some observations on camas digging and baking among present-day Nez Perce. *Tebiwa* 11(1): 48-59.

Summary: Idaho State University sponsored an expedition to the Clearwater Valley to dig and cook camas with Nez Perce people. The paper describes this expedition and the value of camas to the Nez Perce people before and after Chief Joseph's time. It also discusses other plants used in camas digging and processing.

Methodology: Interviews, participation, field research

Significance to Nez Perce ethnobotany: The paper documents actual processing methods used by Nez Perce people during the 1970s.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Downing, Glenn R.

Author category: Anthropology

Background: Idaho State University

Special interests:

Methodology: Interviews, participation, field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (7 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes,

hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Drury, C.M. (ed.). 1958. The Diaries and Letters of Henry H. Spalding and Asa Bowen Smith relating to the Nez Perce Mission 1838-1842. Arthur H. Clark. Glendale, CA. 379 pp.

Summary: The early missionaries were dedicated to conversion of the indigenous groups and to convincing them to abandon their traditional ways. Thus the missionaries' journals and letters do not stress the importance of plants in traditional Nez Perce culture. Spalding's diaries and letters contain very little information about Nez Perce plant use. Smith was stationed at Kamiah, and his diaries describe hunting and fishing practices, cooking meat, a "grass" lodge (p. 122), Nez Perce people eating tree lichen, root foods including camas (p. 134), and berries (p. 135). Pages 270-271 describe trees in the area but without mention of indigenous uses of these trees. Smith also mentions a valley along the Tucannon River named after wild hyacinth (p. 92).

Methodology: Library research

Significance to Nez Perce ethnobotany: This book includes only general references to native plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Drury, Clifford M.

Author category: Missionary, History

Background: Presbyterian pastor in Moscow, Idaho, 1928-1938; PHL Whitman College, College Place, WA, 1965; Litt.D. Whitworth College, Walla Walla, WA, 1955; D.D. Buena Vista College 1941

Special interests: Ethnohistory of missionaries/teachers with native inland Northwest people

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (5 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among

many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

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Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

Drury, C.M. 1975. *Nine Years With the Spokane Indians: The Diary, 1838-1848, of Elkanah Walker*. Arthur H. Clark. Glendale, CA. 547 pp.

Summary: This book presents Congregationalist missionary Elkanah Walker's Comments on his experiences living with the Spokane Indians in the early 1800's. Walker's diaries and letters focus on his travels and missionary activities, with only sparse information on plant use by the Spokane people: dugout canoes, mat houses, and their love of native root foods. On page 526 (Appendix 4) Walker describes native foods of the Spokane and how different root foods are dug at different times. Appendix 1 is a description of several medicine rites involving plants.

Methodology: Library research

Significance to Nez Perce ethnobotany: Walker's account presents little specific information on plant use but his descriptions indicate that the Spokane followed a way of life similar in general to that of the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Drury, Clifford M.

Author category: Missionary, History

Background: Presbyterian pastor in Moscow, Idaho, 1928-1938; PHL Whitman College, College Place, WA, 1965; Litt.D. Whitworth College, Walla Walla, WA, 1955; D.D. Buena Vista College 1941

Special interests: Ethnohistory of missionaries/teachers with native inland Northwest people

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (7 total)

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and

for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Duboc, J.L. 1947. Montana's historic bitterroot. Nature Magazine 40(8): 426-427, 444.

Summary: This popular article describes the habitat, appearance, and use of bitterroot. Duboc describes the importance of this plant to Plateau cultures and its value in trade.

Methodology: Library research

Significance to Nez Perce ethnobotany: This essay describes collection and preparation of bitterroot.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Duboc, Jessie L.

Author category: Writer

Background:

Special interests:

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Dubois, C. 1938. The Feather Cult of the Middle Columbia River. General Series in Anthropology No. 7. George Banta Publishing Company, Monasha, WI. 45 pp.

Summary: Dubois' study compares three Native religions: Feather, Shaker, and Washani. The paper presents reminiscences of Native Americans. Nez Perces did participate in Wanapum dreamer Smohalla's meetings. The reminiscences include mention of protection of roots and fruits and the restrictions on digging and eating them.

Methodology: Oral history, field and library research

Significance to Nez Perce ethnobotany: This study discusses religious restrictions on plant food procurement.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Dubois, Cora

Author category: Cultural Anthropology

Background: Professor of Anthropology, Cornell University; B.A. Harvard University (first female graduate).

Special interests: Culture and personality

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (none)

Elias, T. S., and P. A. Dykeman. 1990. Edible Wild Plants: A North American Field Guide. Sterling Publishing Co., Inc. New York. 286 pp.

Summary: In this excellent manual Elias and Dykeman have compiled information on a sampling of North American edible plants. The book contains a section for each of the four seasons including plants available during that season. Each plant is described and illustrated with a photograph (mostly color), and information is presented on habitat, uses, and preparation. The book's introduction includes sections on Native American subsistence and categories of plant foods, and at the end of the book is a section on poisonous plants. The Appendix is a table of nutritional content of selected foods.

Methodology: Library research

Significance to Nez Perce ethnobotany: This book includes 47 plants known to have been used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Elias, Thomas S.

Author category: Botany

Background: Director, Rancho Santa Ana Botanical Garden, Claremont, CA. Dendrologist, New York Botanical Garden 1972-1974; Assistant Curator of Botany, Arnold Arboretum, Cambridge, M.A. 1969-1972

Special interests: Native plants, rare plants

Methodology: Library research

Context: scientific/academic, popular writing

Specific Nez Perce plants discussed in this reference (46 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and to aid healing after childbirth (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Forest soils and banks, low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia megarhiza* (A. Gray) Parry ex S. Watson**

Nez Perce name:

Plant family: Portulacaceae

English name: alpine springbeauty

Description: Small succulent herbaceous perennial from a fleshy taproot; leaves in large rosettes, spatula-shaped, delicate; flowers white to deep pink.

Habitat: Gravelly soils, rock crevices, talus, montane inland western North America.

Plant parts used: root

Use category: Food

Specific uses: Food: an occasional food.

Other plants used in similar ways: Food: *Claytonia lanceolata*

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorous

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Galium boreale* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: northern bedstraw

Description: Herbaceous perennial from rhizomes, stems square; leaves narrow, in whorls of four; flowers pale yellow, with four petals; fruits round, in pairs.

Habitat: Circumboreal, in wet places.

Plant parts used: roots, seeds

Use category: Food, Technology

Specific uses: Food: seeds. Technology: roots for red or yellow coloring agent.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Lithospermum rudemale*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches

as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Oenothera villosa* Thunberg var. *strigosa* (Rydberg) W. Dietrich & Raven**

Nez Perce name:

Plant family: Onagraceae

English name: common evening-primrose

Description: Biennial with basal rosette and linear leaves along flowering stalk; flowers striking, delicate, lemon-yellow, with a narrow tubular base and four petals; fruit a capsule.

Habitat: Moist meadows and streambanks of lowlands to moderate elevations; inland western and central US.

Plant parts used: roots, tops

Use category: Food, Medicine

Specific uses: Food: leaves. Medicine: bruises (plant poultice); hemorrhoids (root decoction externally or hot root poultice).

Special preparation: Food: the leaves were cooked.

Comments: Formerly called *Oenothera strigosa*.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamitqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation.

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.
Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.

Plant parts used: whole plants, leaves

Use category: Food, Medicine

Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)

Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.

Comments: peppery taste; introduced plant.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta x tá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú x cimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear

sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine:

emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead

stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower

infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower

infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide

(dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh

elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).
Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.
Other plants used in similar ways: Food: *Shepherdia canadensis*.
Comments: Best taste when gathered after frost.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:
Plant family: Elaeagnaceae English name: buffaloberry, soapberry
Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.
Habitat: Forests or meadowy places at various elevations in boreal North America.
Plant parts used: roots, bark, stems/leaves, fruits Use category: Food, Beverage, Medicine, Spiritualism, Confection
Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.
Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)
Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.
Other plants used in similar ways: Food: *Shepherdia argentea*

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**
Plant family: Typhaceae English name: common cattail
Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.
Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.
Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff Use category: Food, Technology, Medicine
Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour. Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).
Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split
Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Viola* spp.**

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Emanuel, R.M. 1994. A Field Guide to Ethnobotanical Plants of the Winema National Forest. USDA-Forest Service Pacific Northwest Region R6-WIN-TP-04-95. 77 pp.

Summary: This is a field guide to ethnobotanically important plants. However, at the request of the Klamath people, whose territory is in the Winema National Forest, no information is included on how each plant was used. The plants are arranged by general categories (e.g. trees, grass-like) and each is illustrated with a color photograph and line drawings.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Most of the plants in this book were also used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Emanuel, Robert M.

Author category: Integrated Resources

Background: Winema National Forest, OR

Special interests: Native plants

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (49 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting

(bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: 'grass,' *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to 'break' grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, haffing and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, 'Indian-hemp'

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow 'pods' in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, haffing, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, 'cornhusk' bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: berries, leaves

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: stems, bark, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root; young flower stalks; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; 'seeds' eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ('seeds' eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The 'seeds' were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks & leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cercocarpus ledifolius Nuttall

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: wood, bark

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

Chimaphila umbellata (Linnaeus) Barton var. occidentalis (Rydberg) Blake

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems Use category: Food, Technology, Medicine
Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).
Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials.
Nutritional value: High in calcium.
Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**
Plant family: Rosaceae English name: blueleaf strawberry
Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.
Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.
Plant parts used: whole plant, fruits Use category: Food, Beverage, Technology
Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.
Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.
Nutritional value: 33-56% mg vitamin C.
Other plants used in similar ways: Food: *Fragaria vesca*

***Iris missouriensis* Nuttall**

Nez Perce name:
Plant family: Iridaceae English name: wild blue iris
Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.
Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.
Plant parts used: rhizomes Use category: Medicine
Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Juncus balticus* Willdenow**

Nez Perce name:
Plant family: Juncaceae English name: Baltic rush
Description: Herbaceous perennial, stems in lines along long fibrous rhizomes, stems cylindrical, no leaf blades present; flowers small, with six scale-like 'petals,' in a dense or open cluster with stem extending beyond it.

Habitat: Wet places from low to high elevations, tolerates salt and alkali; subarctic and temperate North America and Eurasia.

Plant parts used: stems

Use category: Technology

Specific uses: Technology: some groups used taller stems in basketry or infused stems for brownish-green coloring agent

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp., *Symphoricarpos albus*

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough,

fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia bolanderi* (A. Gray) A. Nelson & J.F. Macbride**

Nez Perce name:

Plant family: Apiaceae

English name: yampa

Description: Herbaceous perennial from a fleshy carrot-like taproot; leaves dissected, with long narrow segments, some of the terminal leaf segments very long; flowers small, white, in umbrella-shaped clusters.

Habitat: Moist places (sometimes on dry hillsides) in the foothills and high plains of interior western North America (not in Washington).

Plant parts used: roots

Use category: Food

Specific uses: Food: roots.

Other plants used in similar ways: Food: *Perideridia gairdneri*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, 'common reed'

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, shoots, leaves, sap

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid 'honey' collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus contorta* Douglas ex Loudon**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles,

sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, wood, seeds, leaves, pitch

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone 'hearts' for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: wood, bark

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: míttip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue 'berries'.

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as 'pipes' to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh

elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical 'spongy' stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Sium suave Walter

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

Taxus brevifolia Nuttall

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after 'hardening' in fire), spears, mat needles, awls, handles, wedges, paddles.

Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátocx**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff Use category: Food, Technology

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Valeriana edulis Nuttall ex Torrey & Gray

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Endacott, N. A. 1992. The Archaeology of Squirt Cave: Seasonality, Storage, and Semisedentism. M.A. Thesis (Anthropology), Washington State University. Pullman. 150 pp.

Summary: This thesis analyzes artifacts excavated from Squirt Cave along the lower Snake River in the 1960's. The materials analyzed include a sample of textiles and wood items that were made within the past 2000 years. Endacott summarizes knowledge of Palouse archaeology, ethnography, seasonal round, and food storage. The thesis also describes the past and present environment in the lower Snake River area and summarizes Leonhardy and Rice's culture chronology based on archaeological sites along the lower Snake River. Materials at the Squirt Cave site evidence a semisedentary life style.

Methodology: Laboratory and library research

Significance to Nez Perce ethnobotany: The Palouse are closely related to the Nez Percés (some archaeologists have considered the Palouses as Nez Percés), and their technology was very similar.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Endacott, Neal A.

Author category: Archaeology

Background: Ph.D. candidate and M.A. Anthropology 1992, Washington State University, Pullman

Special interests: Interpretation of archaeological sites

Methodology: Laboratory and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (12 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **liítá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Evans, S. R. 1996. Voice of the Old Wolf: Lucullus Virgil McWhorter and the Nez Perce Indians. WSU Press. Pullman, WA. 196 pp.

Summary: Evans' book is an account of L.V. McWhorter's relationship with the Nez Perce Indians, their history focusing on the mid to late 1800's, and his efforts to help them during the difficult period of the early 1900's. Evans does not mention specific plants important in Nez Perce culture but does discuss root-gathering and the loss of traditional digging and berrying areas to Euroamerican encroachment. The book explains the relationship between Nez Perce enjoyment of the rodeo/fair circuit and the feasts and celebrations associated with traditional Nez Perce cyclical travels to gathering areas. Evans also mentions "special holy roots" used in sweat baths (page 43). This may refer to licorice-root (*Ligusticum* sp.). The photograph two (unnumbered) pages before page 86 shows a cornhusk bag and Plateau-style conical basketry hats.

Methodology: Library research

Significance to Nez Perce ethnobotany: This book is a historical record of Nez Perce people in the early twentieth century.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Evans, Steven R.

Author category: History

Background: Professor of History, Lewis-Clark State College, Lewiston, ID; PhD, History, Washington State University, Pullman

Special interests: Nez Perce history

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after the plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qemes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulbs, stalks and leaves

Use category

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington/northeast Oregon, east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: staple. Medicine: healing and strengthening (wet sack of it rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Everett, Y. 1997. A Guide to selected Non-Timber Forest Produces of the Hayfork Adaptive Management Area, Shasta-Trinity and Six Rivers National Forests, California. U.S. Forest Service Pacific Southwest Research Station General Technical Report PSW-GTR-162. 64 pp.

Summary: This field guide is directed toward people wanting to collect non-timber forest products in the National Forests, to encourage responsible practices and avoid depletion of plants. The book includes a description and photocopy of each plant, with information on habitat, collecting time and methods, importance to Native Americans, and uses. A rough sketch indicates plant size relative to human stature.

Methodology: Library research

Significance to Nez Perce ethnobotany: The book includes 11 plants used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Everett, Yvonne

Author category: Landscape Architecture, Forestry

Background: Professor, Department of Landscape Architecture, University of California, Berkeley; Director of Research, USFS Watershed Research and Training Center, Hayfork, CA; Ph.D. Wildland Resource Science, University of California, Berkeley

Special interests: Forest/landscape ecology, indigenous knowledge systems, agroforestry

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (11 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Arctostaphylos nevadensis* A. Gray**

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: leaves, berries

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction);

respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones

Use category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima myrsinites*); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

Farrand, L. 1921. Notes on the Nez Perce Indians. American Anthropologist N.S. 23: 244-246.

Summary: This short paper is based on information provided by Jonas Hayes, a Nez Perce. Farrand mentions "reed" tips and root digging.

Methodology: Oral history, field research

Significance to Nez Perce ethnobotany: The notes include information on plant use.

Implications for future management of Nez Perce National Historical Park lands: Hayes mentioned that the best place to dig camas was across the Clearwater River from Lapwai [from Lapwai Creek?].

About the author: Farrand, L.

Author category: Anthropology

Background:

Special interests: Ethnography

Methodology: Oral history, field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried leaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Feder, N. 1933. **Colors in Indian Arts; Their Sources and Uses. Denver Art Museum Leaflet 56. Denver, CO. 3 pp.**

Summary: Part of the Denver Art Museum's leaflet series, this short publication summarizes materials, including plant materials, used to color Indian art, including basketry.

Methodology: Library research

Significance to Nez Perce ethnobotany: Nez Perce basketweavers used several of the plants mentioned to add color to their basketry.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Feder, Norman

Author category: Art

Background: Curator, Denver Art Museum

Special interests: Native Art

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice.

Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten);

tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).
Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring
Nutritional value: Fruits high in vitamin C.
Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Equisetum palustre* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: marsh horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to persistent black teeth with white margins; reproducing by spores borne in cones.

Habitat: Wet places of the lowlands to mid-elevations in the mountains; circumboreal and south to south Washington, northern Idaho, northwest Montana, Nevada, and Pennsylvania.

Plant parts used: rhizomes, stems

Use category: Food, Technology

Specific uses: Technology: stems for scouring, sandpaper; rhizomes for basketry imbrication (black iridescent color). Medicine: diuretic (stem infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum laevigatum*

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Fletcher, A. C. ca. 1890's. Ethnologic Gleanings Among the Nez Perces. Unpublished typescript, University of Idaho Special Collections. 135 pp.

Summary: Fletcher compiled miscellaneous ethnologic notes, which are collated in this typescript. Included are sections on the preparation of camas and kouse. Fletcher also lists the Nez Perce names of the months, including four (February, March, April, October) that have names referring to plants.

Methodology: Field research

Significance to Nez Perce ethnobotany: Fletcher was with the Nez Percés at a time when they retained many of their traditions.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Fletcher, Alice C.

Author category: Anthropology

Background: U.S. Allotment Agent

Special interests: Ethnology

Methodology: Field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

French, D. H., and K. S. French. 1998. Wasco, Wishram, and Cascades. Pp. 360-377 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Culturally, people of the western Columbia River who speak Sahaptin are very similar to other Columbia Plateau groups, but because of their location their culture has more Coastal influence. The plants discussed in this chapter are the same plants important in most Plateau cultures. Figure 3 includes a photograph of two dogbane fishnets; Figure 4 illustrates tule mats and their use in housing; Figure 9 illustrates root digging and a first-foods ceremony.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Plants discussed in this chapter are also important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: French, David H.

Author category: Ethnography, ethnobotany

Background: Professor of Anthropology, Reed College, Portland, OR. Ph.D. Columbia University 1949; M.A. Claremont College 1940; B.A. Pomona College 1939

Special interests: Ethnobotany, ecology, social organization, socio-cultural change, mythology, language and culture, perception and cognition

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (44 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Alnus incana (Linnaeus) Moench

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

Amelanchier alnifolia (Nuttall) Nuttall ex M. Roemer

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with

other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.
Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderales*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia redeviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens. Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;.

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine:

stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark

or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex venosus* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes,

cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Frey, R., and D. Hymes. 1998. Mythology. Pp. 584-599 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: In this analysis of Plateau legends some of the roles of plants are mentioned in the stories cited: a Wasco story about a man and his daughter who live by consuming tobacco smoke (pp. 586-7), the Warm Springs story about Basket Woman and chipmunk (pp. 589-590), a Wasco-Wishram boy abandoned on a reed-cutting expedition to teach him a lesson, and digging camas in a Kalispell story of Rabbit and Thunder (p. 592). A large majority of "myth people" have the names of animals, but sometimes they are plants (e.g. the Coeur d'Alene Chief Child of the Root and Coyote's transforming himself into a piece of driftwood).

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: The inclusion of plants and "plant people" in Plateau stories demonstrates their importance in traditional life.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Frey, Rodney

Author category: Anthropology

Background: Associate Professor University of Idaho, Moscow. Taught at Lewis-Clark state College, Coeur d'Alene, ID 1987-1998; Carroll College, Helena, MT 1980-1986. Ph.D. university of Colorado 1979

Special interests: Ethnology, Native traditions, Native land rights

Methodology: Interviews, library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Gass, P. 1904. Gass's Journal of the Lewis and Clark Expedition (Reprinted from the 1811 edition). A.C. McClurg & Co. Chicago. 298 pp.

Summary: Sergeant Gass was a member of President Jefferson's Corps of Discovery on the 1804-1806 Voyage of Discovery from the Missouri River to the Pacific Ocean. Gass's journals record the progress of the expedition, observations on vegetation and animals, and the explorers' relations with indigenous peoples. Pages 147-155 and 226-250 of the journals cover the explorers' contact with the Nez Perce people. His account of camas roasting is on pp. 148.

Methodology: Observation and experiences

Significance to Nez Perce ethnobotany: Gass discusses how important camas was in the Nez Perce diet and mentions other plant uses (e.g. cattail tips on p. 155).

Implications for future management of Nez Perce National Historical Park lands:

About the author: Gass, Patrick

Author category: U.S. Army

Background:

Special interests: Exploration

Methodology: Observation and experiences

Context: popular interest

Specific Nez Perce plants discussed in this reference (16 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Betula occidentalis Hooker

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Sagittaria latifolia Willdenow

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Trifolium macrocephalum* (Pursh) Poiret**

Nez Perce name:

Plant family: Fabaceae

English name: largeheaded clover

Description: Herbaceous perennial, leaves with five leaflets; one-one 1/4 inch pink or white flowers in large dense heads; fruits short pods.

Habitat: Dry shallow, rocky or sandy soils, often on exposed ridgetops, low to high elevations; east of the Cascade Mountains from central Washington to western Idaho and south to California and Nevada.

Plant parts used: flower heads

Use category: Food

Specific uses: Food: flower heads eaten raw or cooked.

Special preparation: Beverage: the flower heads were brewed for tea

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Geyer, C. A. 1846. Notes on the vegetation & general character of the Missouri & Oregon Territories, made during a Botanical Journey in the State of Missouri, and across the South Pass of the Rocky Mountains, to the Pacific, during the years 1843 and 1844. London Journal of Botany 5: 22-41.

Summary: Geyer's notes on his plant collections in the interior Northwest U.S. include comments on Native uses of many of the plants. This is the first portion" of his notes referring to the Columbia Plateau and the Nez Perce people, who he called the Saptonas.

Methodology: Field and herbarium research

Significance to Nez Perce ethnobotany: Geyer was the next person after Lewis and Clark to study the plants of Nez Perce territory and the ways the Nez Perce people used them.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Geyer, Charles A.

Author category: Botany

Background: German nurseryman, editor of a horticultural journal, associated with Kew Gardens, London

Special interests: Exploration

Methodology: Field and herbarium research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (21 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was

taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot.

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken

bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative

(wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**

Plant family: Ranunculaceae

English name: sagebrush buttercup

Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.

Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.

Plant parts used: whole plant, toxic

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice). Spiritualism: decoction as body wash or for purification in sweathouse.

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in

bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split.

For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Geyer, C. A. 1847. Notes on the vegetation and general character of the Missouri & Oregon Territories, made during a Botanical Journey in the State of Missouri, and across the South Pass of the Rocky Mountains, to the Pacific, during the years 1843 and 1844. London Journal of Botany 6: 285-310, 509-524.

Summary: Geyer's notes on his plant collections in the interior Northwest U.S. include comments on Native uses of many of the plants. This is the second part of his notes referring to the Columbia Plateau and the Nez Perce people, who he called the Saptonas. He includes a description of the large festive camas-digging gatherings (pages 299-300), kouse (p. 305), bitterroot (pp. 305-308), and yampa (pp. 518-519). Nez Perce territory is discussed on pp. 516-522.

Methodology: Field and herbarium research

Significance to Nez Perce ethnobotany: Geyer spent time with the Nez Perce people and surrounding groups and recorded his observations on their use of plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Geyer, Charles A.

Author category: Botany

Background: German nurseryman, editor of a horticultural journal, associated with Kew Gardens, London

Special interests: Exploration

Methodology: Field and herbarium research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (59 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Calypso bulbosa* (Linnaeus) Oakes**

Nez Perce name:

Plant family: Orchidaceae

English name: fairy slipper

Description: Herbaceous perennial from a bulb, with one succulent oval leaf and pink orchid flower with purple spots on the lip.

Habitat: Cool moist forests from the lowlands to moderate elevations in the mountains; western North America.

Plant parts used: flowers

Use category: Spiritualism

Specific uses: Spiritualism: Charm

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cellis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits.

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Clintonia uniflora* (Schultes) Kunth**

Nez Perce name:

Plant family: Liliaceae

English name: beadlily

Description: Low herbaceous perennial from creeping succulent rhizomes; leaves two or three, rather succulent, with veins paralleling the margins; flowers usually one or two, white, with 6 "petals;" fruits blue berries.

Habitat: Moist spots in coniferous forests from the foothills to moderate elevations in the mountains; northwestern US, California, and B.C. and southwest Alberta.

Plant parts used: fruits

Use category: Technology, Medicine

Specific uses: Technology: fruits for blue coloring. Medicine: kidney stones (rhizome juice) wounds (plant poultice); eyewash (juice)

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.

Medicine: roots were chewed for sore throat or tonic.

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Perces but available along the Snake River.

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it

would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Lomatium ambiguum* (Nuttall) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: swale biscuitroot

Description: Herbaceous perennial from taproot usually with ball-shaped tuber(s); leaves divided into linear segments up to five-6 mm wide; flowers small, yellow, in umbrella-shaped clusters; fruits dry, flat, winged, in pairs.

Habitat: Open areas at low to moderate elevations, inland western US.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: tubers as a staple; flowers/young leaves as a seasoning. Medicine: colds, sore throat (young leaf/flower infusion).

Special preparation: Food: tubers were ground into flour

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin

conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour.

Nutritional value: Rich in vitamin C

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Pterospora andromedea* Nuttall**

Nez Perce name:

Plant family: Ericaceae

English name: pinedrops

Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.

Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.

Plant parts used: whole plant

Use category: Technology, Medicine

Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.

Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1897).

***Rhus glabra* Linnaeus**

Nez Perce name: tilitilitit

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits/seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rosa* spp.**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rumex venosus* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: mǐttip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion);

fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 "petals"; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

Gill, S. J., and R. Thomas. 1984. Some Notes on Wanapum Ethnobotany. Unpublished report. Pullman, WA. 32 pp.

Summary: Based on interviews with Frank Buck, this paper records knowledge of Wanapum plant use (The Wanapum people live in the Priest Rapids area south of Vantage along the Columbia River, Washington). The paper describes the importance of the First Roots ceremony and discusses uses of each plant.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Wanapum Indians had a close relationship with their Palouse neighbors, and the Palouse are very closely related to the Nez Perce people. Many of the plants important in Wanapum culture are also important to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Gill, Steven J.

Author category: Ethnobotany

Background: Information Technologist, Washington State University, Pullman; Ph.D. Washington State University, MS Marquette University

Special interests: Native North American ethnobotany

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (22 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium acuminatum* Hooker**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: tapertip onion

Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.

Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing

(pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.
Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: heqé ʔe

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: qémqem

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves) chewed, stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites

(foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cymopterus terebinthinus* (Hooker) Torrey & Gray var. *terebinthinus

Nez Perce name:

Plant family: Apiaceae

English name: turpentine cymopterus

Description: Short perennial from a taproot, stems and leaves spreading along surface to form rounded mound; leaves resinous-scented, shiny yellow-green, finely dissected; flowers small, yellow, in umbrella-shaped clusters; fruits in pairs, dry, with wavy wings.

Habitat: Sandy or rocky places including dunes and talus; lowlands to moderate elevations in interior Washington, Oregon, Idaho, and Montana;

Plant parts used: root

Use category: Medicine

Specific uses: Medicine: treating sores, colds.

Special preparation: Medicine: the roots were chewed.

Comments: Easily confused with lomatiums.

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones

Use category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima* myrsinites); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root

poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

Gottesfeld, Leslie M. 1992. The importance of bark products in the aboriginal economies of Northwestern British Columbia, Canada. Economic Botany 46(2): 148-157.

Summary: Gottesfeld's paper discusses uses of bark for food, medicine, and fiber among western British Columbia indigenous peoples, including comparisons with interior groups. It is interesting that the author correlates use of bark from many species with a densely forested environment, as contrasted with unforested or openly forested areas where herbaceous species fill the same needs. The Nez Perce people lived in the more open environment and apparently did use fewer different barks than the groups that are the focus of this paper.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: The attribution of increased diversity of woody species used for bark products to low diversity of herbaceous species in the environment is interesting. However, the diversity of woody species available also plays a role. The paper discusses at least four plants providing bark used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Gottesfeld, Leslie M.

Author category: Ethnobotany

Background:

Special interests: Native North American ethnobotany

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Pinus contorta* Douglas ex Louden**

Nez Perce name: qalámqalam

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark

infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Gulick, W. 1981. Chief Joseph Country: Land of the Nez Perce. The Caxton Printers, Ltd. Caldwell, ID. 316 pp.

Summary: This book traces the 1877 flight of the Chief Joseph Band of Nez Perce Indians from their homeland and their encounters with the U.S. Army. The introductory chapters summarize traditional Nez Perce life, the arrival of the horse, and early Euroamerican explorers and traders. Housing and subsistence are discussed on pp. 7-9.

Methodology: Library research

Significance to Nez Perce ethnobotany: The section on Nez Perce subsistence mentions important root and fruit foods.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Gulick, Bill

Author category: Writer

Background:

Special interests: Northwest history

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (16 total)

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant,

cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent;

smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark

or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Taxus brevifolia Nuttall

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Gunther, E. 1950. The westward movement of some Plains traits. American Anthropologist 52: 174-180.

Summary: Gunther's very interesting paper discusses the adoption of Plains-style hide clothing by Columbia Plateau groups to replace their traditional bark garments. The Nez Perce people were one of the Plateau groups that crossed the Rocky Mountains to hunt bison on the Great Plains and to trade with the Plains people. Gunther mentions the Nez Perce items desired by Plains cultures, including camas, berries, salmon, and woven dogbane bags.

Methodology: Library research

Significance to Nez Perce ethnobotany: Gunther emphasizes the importance of trade with Great Plains people and the plant foods and fiber items offered them by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Gunther, Erna

Author category: Ethnology

Background: Professor of Anthropology, University of Washington, Seattle. Professor of Anthropology, University of Alaska

Special interests: Northwest Coast peoples, Native art

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.
Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs
Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.
Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Haines, F. 1955. *The Nez Perces: Tribesmen of the Columbia Plateau*. University of Oklahoma Press. Norman. 329 pp.

Summary: This ethnohistorical review includes a chapter on traditional Nez Perce life, with Comments on plant use including a description of camas baking. Haines was impressed with the cleanliness of Nez Perce lodges, and he attributes this to their habit of transporting roofing mats to seasonal camps, leaving the winter lodges open to the sun and wind.

Methodology: Library research

Significance to Nez Perce ethnobotany: The book presents a general overview of traditional plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Haines, Francis

Author category: History

Background: Ph.D. History UC Berkeley. Professor of Social Science Oregon College of Education, Monmouth

Special interests: Horses, the West, American Indians

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (12 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qee mu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in the Clearwater area but was formerly abundant at Kamiah (which is named after the plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Bryoria fremontii (Tuckerman) Brodo & D. Hawksworth

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Leymus cinereus (Scribner & Merrill) A. Löve

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhoea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in

sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Halsey, C., and R. R. Beale. 1983. **Lewis & Clark and the Sahaptian Speaking Americans.** YeGalleon Press. Fairfield, Washington. 28 pp.

Summary: This pamphlet was published to commemorate the 15th annual meeting of the Lewis & Clark Trail Heritage Foundation in August, 1983. The authors focus on Lewis and Clark's contacts with the Nez Perce people. They briefly describe Lewis and Clark's arrival in Nez Perce territory and the kindness of the Nez Percés to the Corps of Discovery, thought to be largely due to the influence of Wat-ku-ese. Included is a discussion of the preparation of camas and kouse, of sweat baths, of fishing, and of notable Nez Perce people.

Methodology: Interviews with 4 Nez Perce elders, library research

Significance to Nez Perce ethnobotany: The pamphlet is based on the Lewis and Clark party's journals, which present accurate observations of camas and kouse use in the early 1800's, and, on the recollections of four Nez Percés alive during 1877 war.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Halsey, Cheryl

Author category: Writer

Background: Richland, Washington

Special interests: Pacific Northwest History

Methodology: Interviews with 4 Nez Perce elders, library research

Context: historical

Specific Nez Perce plants discussed in this reference (3 total)

Allium spp.

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.
Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs
Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.
Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Harbinger, L. J. 1964. The Importance of Food Plants in the Maintenance of Nez Perce Cultural Identity. M.A. Thesis (Anthropology), Washington State University. Pullman. 92 pp.

Summary: Harbinger's thesis is the first study focusing specifically on Nez Perce ethnobotany. It compares traditional and contemporary importance of plants and describes cultural traditions centered on plants (e.g. first roots ceremony). Harbinger includes a description of typical traditional meals and specific information about plants used for food, technology, medicine, and spiritual purposes. Appendix D is a summary of Nez Perce plant classification; Appendix E presents an account of the camas-baking process by a Nez Perce woman, Elizabeth Wilson.

Methodology: Literature review, interviews

Significance to Nez Perce ethnobotany: Harbinger's study is significant in documenting Nez Perce plant use during the first half of the 20th century. Her consultants are gone now, but some of them had direct memories of the ethnographic period. The thesis is valuable documentation.

Implications for future management of Nez Perce National Historical Park lands: Harbinger mentions that only one traditional camas digging area still provides abundant camas: Musselshell Meadows.

About the author: Harbinger, Lucy J.

Author category: Ethnobotany, ethnography

Background: M.A. Anthropology Washington State University Pullman 1964

Special interests: Relationships of plants and cultural traditions and customs

Methodology: Literature review, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (60 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: pícpic

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland

Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Cercocarpus ledifolius Nuttall

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

Cirsium scariosum Nuttall

Nez Perce name: **títux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderales*

***Eriophyllum lanatum* (Pursh) Forbes**

Nez Perce name: **qayqayat**

Plant family: Asteraceae

English name: Oregon sunshine, woolly sunflower

Description: Small softly hairy grayish herbaceous perennial with toothed to deeply lobed leaves; flowers in heads with bright yellow rays.

Habitat: Rocky slopes, shallow soils, talus, and other dry areas, lowlands to mid elevations; inland montane western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: leaves rubbed on salmon hooks and lines to obscure them.

Special preparation: Technology: the leaves were soaked and rubbed on

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorus.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: cikié yelx

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimile**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: **písqu**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil

rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú tx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phacelia heterophylla* Pursh**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: varileaf phacelia

Description: Tall densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy, often with two deep lobes at base; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Dry open places, usually sandy or rocky, various elevations; widespread in montane western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: tuberculosis (steam inhaled, plant infusion); colds, fever (steam inhaled); diarrhea, bowel hemorrhage, to facilitate childbirth (plant infusion)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism:

branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking

pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit)

decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad

moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Hart, J. A. 1976. Montana--Native Plants and Early Peoples. Montana Historical Society and Montana Bicentennial Administration. 75 pp.

Summary: "Montana--Native Plants and Early Peoples" describes in detail the importance of plants in Native cultures. For each plant there is also a description, statement of habitat and range, and line drawing. Nez Perce examples are included (e.g. their use of alder bark for coloring and of juniper for treating respiratory disorders). Hart also mentions that through trade the Nez Percés provided Canby licorice-root to other groups. Roasting and preparation of camas are described on page 17.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: This book includes Comments on specific Nez Perce plant uses.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hart, Jeffrey A.

Author category: Ethnobotany

Background: Currently in South America? Degree from University of Montana

Special interests:

Methodology: Interviews, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (58 total)

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves) chewed, stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Cirsium scariosum* Nuttall**

Nez Perce name: **titux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps,

spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried

bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves;

blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.

Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox,

measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (**qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf *lomatium*, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nuphar polysepalum* Engelm**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant. Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion,

or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.
Confection: root chewed

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive;

leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of

digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Rhamnus purshiana DeCandolle

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

Rhus glabra Linnaeus

Nez Perce name: **tilitílitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium globulare Rydberg

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

Veratrum spp.

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

Hart, J. A. 1979. The ethnobotany of the Flathead Indians of western Montana. Botanical Museum Leaflets, Harvard University 27(10): 263-307.

Summary: Hart's paper summarizes information on plants important to the Flathead Indians. It is based on his interviews with Flathead people as well as research by Malouf, Stubbs, Teit, and Turney-High. Hart describes how Flatheads prepared and used each plant. The concluding section presents further information about the collection and preparation of food plants and indicates relative importance of various roots and berries.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: This paper includes many plants known to have been used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hart, Jeffrey A.

Author category: Ethnobotany

Background: Currently in South America? Degree from University of Montana

Special interests:

Methodology: Interviews, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (89 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US, up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: Medicine: Roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke),

respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Besseyia rubra* (Douglas) Rydberg**

Nez Perce name:

Plant family: Scrophulariaceae

English name: red besseyia

Description: Small herbaceous perennial from fibrous roots; leaves thick, oval to heart-shaped, margins finely toothed; flowers small, without petals, in a dense spike.

Habitat: Meadows and open slopes; lowlands and lower moderate elevations in the inland Northwest US.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Medicine: Tonic, treating colds (decoction).

Special preparation: Medicine: the fresh or dried roots were brewed for an infusion

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomachache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal, coniferous woods south to California, Colorado, eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium boreale* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: northern bedstraw

Description: Herbaceous perennial from rhizomes, stems square; leaves narrow, in whorls of four; flowers pale yellow, with four petals; fruits round, in pairs.

Habitat: Circumboreal, in wet places.

Plant parts used: roots, seeds

Use category: Food, Technology

Specific uses: Food: seeds. Technology: roots for red or yellow coloring agent.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Lithospermum rudérale*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion), to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense

for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, B.C.

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.

Confection: root chewed

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pterospora andromedea* Nuttall**

Nez Perce name:

Plant family: Ericaceae

English name: pinedrops

Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.

Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.

Plant parts used: whole plant

Use category: Technology, Medicine

Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.

Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**

Plant family: Ranunculaceae

English name: sagebrush buttercup

Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.

Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.

Plant parts used: whole plant, toxic

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice).

Spiritualism: decoction as body wash or for purification in sweathouse

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.

Plant parts used: whole plants, leaves

Use category: Food, Medicine

Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)

Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.

Comments: peppery taste; introduced plant.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus parviflorus Nuttall

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé mítip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification;

leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátocx**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Percés preferred to collect these berries in the subalpine fir zone.

***Vaccinium scoparium* Leiberg**

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a 2-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Viola* spp.**

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Harvey, A. G. 1947. *Douglas of the Fir: A Biography of David Douglas Botanist*. Cambridge University Press. MA. 290 pp.

Summary: The 1826 botanical explorations of David Douglas along the Columbia and Snake Rivers are chronicled on pp. 53-90 of this biography. The Indians called Douglas "Grass Man" because of his interest in plants of all kinds.

Methodology: Library research

Significance to Nez Perce ethnobotany: Douglas collected a number of ethnobotanically important species.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Harvey, Athelstan G.

Author category: History

Background:

Special interests: Biography

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (16 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;.

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils, deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth)

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch

decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Ribes inerme* Rydberg**

Nez Perce name: **pí łus**

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: *Ribes* seeds are high in gamma-linoleic acid.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Trifolium macrocephalum* (Pursh) Poiret**

Nez Perce name:

Plant family: Fabaceae

English name: largeheaded clover

Description: Herbaceous perennial, leaves with five leaflets; one-one 1/4 inch pink or white flowers in large dense heads; fruits short pods.

Habitat: Dry shallow, rocky or sandy soils, often on exposed ridgetops, low to high elevations; east of the Cascade Mountains from central Washington to western Idaho and south to California and Nevada.

Plant parts used: flower heads

Use category: Food

Specific uses: Food: flower heads eaten raw or cooked.

Special preparation: Beverage: the flower heads were brewed for tea

Havard, V. 1896. Drink Plants of the North American Indians. Bulletin of the Torrey Botanical Club 23(2): 33-46.

Summary: Havard surveys some of the plants used by indigenous North American people for drinks. He includes plants used as an emergency source of water, those whose fruits or leaves are mixed with water, and those used for intoxicating drinks.

Methodology: Field research

Significance to Nez Perce ethnobotany: Several plants included here were used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Havard, Dr. V

Author category: Medicine

Background: U.S. Army

Special interests: Ethnobotany

Methodology: Field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (8 total)

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage

(rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits/seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).

Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.

Other plants used in similar ways: Food: *Shepherdia canadensis*.

Comments: Best taste when gathered after frost.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification;

leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

Hedberg, K. 1999. Humble camas is at the root of a tradition. Lewiston Morning Tribune Sunday, June 6, 1999: C1. Lewiston, ID.

Summary: Camas was one of the staples of the traditional Nez Perce diet, but it is now difficult for Nez Perce people to find good areas where they can practice traditional camas digging. Most camas habitat in Nez Perce territory has been destroyed through plowing, draining, and herbicides. This article discusses the importance of camas in Nez Perce culture, camas digging and preparation, and its nutritional contribution. There are a few misleading statements in the article. For example, it states that "there are two species of blue camas, one purple camas, and one white camas, "the death camas," that grows amidst the edible others." There is only one species of edible camas in Nez Perce territory, and it may have blue, purple, or bright white flowers. Death-camas is a totally different plant with cream-white flowers, and in this area it does not grow amidst edible camas.

Methodology: Interviews

Significance to Nez Perce ethnobotany: The article documents that camas is still very important to Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands: Hedberg's article makes a case for protection and restoration of camas habitats.

About the author: Hedberg, Katherine

Author category: Journalism

Background: Writer for Lewiston Morning Tribune, Idaho

Special interests:

Methodology: Interviews

Context: popular interest

Specific Nez Perce plants discussed in this reference (4 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among

many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Heiser, C. B. 1951. The sunflower among the North American Indians. Proceedings of the American Philosophical Society 95(4): 432-448.

Summary: Heiser's paper discusses the importance of sunflowers in indigenous American cultures, describing cultivation of annual sunflower and the various strains grown by different groups. Native use of wild sunflowers is discussed on pages 432-433.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Nez Perce people used wild sunflowers in the ways discussed by Heiser.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Heiser, Charles B., Jr.

Author category: Botany

Background: Botanist, Guggenheim Fellow, N.S.F. Sr. Fellow. Ph.D. University of California 1947, M.A. 1944; A.B. Washington University 1943

Special interests: Ethnobotany, plant systematics, evolution, cytogenetics; origins and genetics of food crops

Methodology: Garden, field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

Heiser, C. B. 1976. The Sunflower. University of Oklahoma Press. Norman, OK. 198 pp.

Summary: This delightful book, aimed at the popular audience, presents a thorough discussion of the botany, horticulture, and lore of sunflowers. Chapter 29 discusses sunflowers among American Indians. This chapter focuses on cultivated sunflowers but includes early explorers' observations on native gathering and preparation of wild sunflower seeds, even by groups that also cultivated sunflowers. The map on page 37 shows the area where wild sunflower seeds are known to have been gathered by Indians; this area includes Nez Perce territory.

Methodology: Garden, field, laboratory, and library research

Significance to Nez Perce ethnobotany: The Nez Perce people gathered sunflower seeds for food.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Heiser, Charles B., Jr.

Author category: Botany

Background: Botanist, Guggenheim Fellow, N.S.F. Sr. Fellow. Ph.D. University of California 1947, M.A. 1944; A.B. Washington University 1943

Special interests: Ethnobotany, plant systematics, evolution, cytogenetics; origins and genetics of food crops

Methodology: Garden, field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Helfrich, D. 1965. The first boats. Klamath Echoes 1(2): 1-7.

Summary: This paper focuses on early Euroamerican boats on Upper Klamath Lake but there is some mention of Klamath watercraft. On p. 3 the author quotes an 1862 account of a Klamath woman powering a tule raft by using her feet as paddles.

Methodology: Interviews; library research

Significance to Nez Perce ethnobotany: Tule rafts were apparently used to help the Joseph band carry supplies across the swollen Snake River during their 1877 move to Lapwai.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Helfrich, Devere

Author category: History

Background: Editor, Klamath Echoes

Special interests: Water transportation, Klamath Marsh area, OR

Methodology: Interviews; library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Hicks, B. A., and M. E. Morgenstein. 1994. Archaeological Studies in the Palouse Canyon Archaeological District: 1993 Field Season Vol. 1. BOAS Research Report 92122: 166 pp. plus appendices. BOAS, Inc., Seattle, Washington.

Summary: This is a report of the results of site testing and survey in Palouse Canyon (Walla Walla District Corps of Engineers). Botanical analysis was done of materials from storage pit features in McGregor Cave. Storage pits were lined with Great Basin wildrye and/or old matting. Matting was also used to separate storage layers. Hicks suggests that stored food may have been wrapped in matting and tied with cordage. Appendix E (28 pp.) is a table of botanical analysis results.

Methodology: Field and laboratory research

Significance to Nez Perce ethnobotany: Plants used in archaeological Palouse textiles are likely similar to those used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hicks, Brent A.

Author category: Archaeology

Background: Archaeologist, Colville Confederated Tribes. Archaeologist, BOAS, Inc., Seattle, WA

Special interests:

Methodology: Field and laboratory research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (30 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Eleocharis palustris* (Linnaeus) Roemer & Schultes**

Nez Perce name:

Plant family: Cyperaceae

English name: field spikerush

Description: Herbaceous perennial rhizomatous sedge without leaf blades, flowers in a narrow spike.

Habitat: Riparian and other marshy areas; widespread in temperate and cold-temperate Northern Hemisphere.

Plant parts used: stems

Use category: Technology

Specific uses: Technology: cordage, basketry, bedding/pillows, to sit on in sweathouse.

Special preparation: Technology: the stems were dried and soaked for cordage and baskets.

Other plants used in similar ways: Textiles: *Eleocharis rostellata*

***Eleocharis rostellata* Torrey**

Nez Perce name:

Plant family: Cyperaceae

English name: beaked spikerush

Description: Herbaceous perennial rhizomatous sedge without leaf blades, stems arching over and rooting where they contact ground; flowers in a small spike.

Habitat: Riparian and other marshy areas, tolerant of salt and alkali; North and South America.

Plant parts used: stems Use category: Technology
Specific uses: Technology: cordage, basketry, bedding/pillows, to sit on in sweathouse.
Special preparation: Technology: the stems were dried and soaked for cordage and baskets.
Other plants used in similar ways: Textiles: *Eleocharis palustris*

***Elymus elymoides* (Rafinesque) Swezey**

Nez Perce name:
Plant family: Poaceae English name: bottlebrush squirreltail
Description: Herbaceous perennial cespitose grass.
Habitat: Dry grasslands, shrub-steppe, and open dry forests; interior western US at low to high elevations.
Plant parts used: stems and leaves Use category: Technology
Specific uses: Technology: used in grass mats.
Special preparation: Technology: bundles of stems were used with other grasses for warps in matting.
Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Hesperostipa comata*.
Comments: Formerly called *Sitanion hystrix*.

***Hesperostipa comata* (Trinius & Ruprecht) Barkworth**

Nez Perce name:
Plant family: Poaceae English name: needle-and-thread
Description: Herbaceous perennial cespitose grass.
Habitat: Dry grasslands, shrub-steppe, low to high elevations; western and central North America.
Plant parts used: stems and leaves Use category: Technology
Specific uses: Technology: grass mats.
Special preparation: Technology: bundles of stems used with other grasses as warps in matting.
Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Elymus elymoides*.
Comments: Formerly called *Stipa comata*.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**
Plant family: Poaceae English name: Great Basin wildrye
Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.
Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.
Plant parts used: foliage Use category: Technology, Medicine, Spiritualism
Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.
Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.
Comments: Formerly called *Elymus cinereus*.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**
Plant family: Apiaceae English name: Canby biscuitroot
Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).
Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Rhus glabra* Linnaeus**

Nez Perce name: tilitilitit

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: táxs

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical “spongy” stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby’s navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Spartina gracilis Trinius

Nez Perce name:

Plant family: Poaceae

English name: alkali cordgrass

Description: Herbaceous perennial rhizomatous grass.

Habitat: Alkaline/salty areas at low to moderate elevations; North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: in cordage (Palouse).

Special preparation: Technology: stems/leaves dried and soaked before use

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural “doll formation” of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the

base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed
Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Hilty, I. E., J. M. Peters, E. M. Benson, and M.A. Edwards. 1972. **Nutritive Values of Native Foods of Warm Springs Indians. Extension Service Oregon State University Extension Circular 809: 23 pp. Oregon State University, Corvallis.**

Summary: This is a leaflet summarizing the nutritional contributions of selected indigenous plant and animal foods. Comparisons are made with contemporary food analogues. Included are plant photographs and descriptions of plant habitat and processing methods. The table summarizes nutrient composition.

Methodology: Field and laboratory research, interviews

Significance to Nez Perce ethnobotany: The study includes 9 plants known to have been used by Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hilty, Ivy E.

Author category: Nutrition

Background: Department of Home Economics Research, Oregon State University

Special interests:

Methodology: Field and laboratory research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (9 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Hollander, Z. 1999. Tubers help Coeur d'Alene Tribe feed tradition. The Spokesman-Review October 20, 1999: B1, B4. Spokane, WA.

Summary: The Coeur d'Alene people annually celebrate the importance of the wapato plant (*Sagittaria latifolia*) in their culture. This article describes school children's digging the "water potatoes" and describes their preparation and significance.

Methodology: Interviews

Significance to Nez Perce ethnobotany: The Nez Perce people enjoyed wapato and obtained it through trade or by digging it in areas where it is abundant (it is scarce in Nez Perce territory).

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hollander, Zav

Author category: Journalism

Background: Staff writer, The Spokesman-Review

Special interests:

Methodology: Interviews

Context: popular interesting

Specific Nez Perce plants discussed in this reference (1 total)

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

Hooker, W. J. 1848. **Catalogue of Mr. Geyer's Collection of Plants gathered in the Upper Missouri, the Oregon Territory, and the intervening portion of the Rocky Mountains.** *London Journal of Botany* 6: 65-79.

Summary: Hooker's catalogue of Geyer's collections includes a listing of plants by family with comments on Native use.

Methodology: Herbarium research

Significance to Nez Perce ethnobotany: Geyer noted Indian uses of the plants he collected.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hooker, William J.

Author category: Botany

Background: Director, Kew Gardens, London; Professor of Botany, Glasgow University

Special interests: Scientific description of plants; plants from around the world for cultivation in the British Isles

Methodology: Herbarium research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Rhus glabra* Linnaeus**

Nez Perce name: tilitilitit

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits/seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: qalamititqá

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation

Specific uses:

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Viola orbiculata* Geyer ex Holzinger**

Nez Perce name:

Plant family: Violaceae

English name: darkwoods violet

Description: Herbaceous perennial; leaves round with cordate base; flowers yellow; fruits capsules that open explosively.

Habitat: Streamsides and other moist places, low-moderate to high elevations; from British Columbia south to northern Oregon and east to Idaho and Montana.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Food: flowers. Medicine: influenza, colds, fevers, diuretic, expectorant, laxative, emetic (plant infusion); mumps (plant poultice)

Howard, H. A. 1971. Saga of Chief Joseph. Caxton Printers, Ltd. Caldwell, ID. 399 pp.

Summary: Howard's book sketches Young Chief Joseph's life, focusing on the 1877 Nez Perce flight and events leading up to it. The book quotes Joseph's statement of Nez Perce reactions to demands that they become farmers (p. 130) and mentions camas-digging gatherings.

Methodology: Library research

Significance to Nez Perce ethnobotany: This book clearly emphasizes the deep Nez Perce feelings about their traditional ways of life, including their relationships with the plant world.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Howard, Helen A.

Author category: History

Background: M.A. University of Southern California 1933; B.A. MS University 1927

Special interests: Northwest U.S. history

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Howard, O.O. 1881. Nez Perce Joseph. Lee and Shepard Publishers, New York. 274 pp.

Summary: General Oliver O. Howard was charged with forcing Native Northwest peoples to give up their homelands and move to established reservations. In this book he tells of his experiences with Young Chief Joseph and his father, Old Chief Joseph, as well as Smohalla and other Columbia Plateau leaders. He emphasizes the deep philosophical differences between the treaty and non-treaty Nez Percés. He mentions root digging excursions by the Joseph band but seems to regard these as subterfuge, a cover for planning war

Methodology: Personal reminiscence

Significance to Nez Perce ethnobotany: Howard realized the importance of root foods in a traditional Nez Perce way of life, and he viewed destruction of any traditional food supplies necessary to achieve his goal of suppressing and 'civilizing' Indian people. He mentions Nez Percés congregating in 'Paradise and Hog Heaven Valleys' (near Moscow, Idaho) to dig camas, also mentioning other important resource areas: Imnaha, Wallowa, Camas Prairie, Weippe, Kamiah.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Howard, Oliver O.

Author category: General, U.S. Army

Background: Graduate of U.S. Military Academy, West Point, 1854

Special interests: Obliterating indigenous cultures; transition from slavery in SE U.S.

Methodology: Military

Context: Military

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Hunn, E. S., and D. H. French. 1981. *Lomatium*: a key resource for Columbia Plateau native subsistence. *Northwest Science* 55: 87-94.

Summary: Hunn and French summarize the nutritional contributions of lomatiums in the native Plateau diet, relationships of these plants to Plateau cultures, indigenous nomenclature, and the seasonal round.

Methodology: Interviews and observation

Significance to Nez Perce ethnobotany: This reference discusses most of the lomatiums used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands: This paper emphasizes the importance of habitat management to allow continued use of lomatiums by traditionally-oriented Nez Perce families.

About the author: Hunn, Eugene S.

Author category: Linguistics, ethnobiology, ethnoecology

Background: Professor of Anthropology University of Washington, Seattle; editor *Journal of Ethnobiology*; Ph.D. University of California, Berkeley 1973

Special interests: Relationships of linguistics and the natural world, ethnobiology, cultural ecology, Plateau cultures

Methodology: Interviews and observation

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect

repellant; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellant.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: **cí ci ta**

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.
Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled
Nutritional value: Shoots 15 mg vitamin C per 100 g.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.
Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:
Plant family: Apiaceae English name: potato biscuitroot, "Indian-potato"
Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.
Plant parts used: tuberous root Use category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.
Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú ɪx**
Plant family: Apiaceae English name: Salmon River desert-parsley
Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.
Plant parts used: leafy shoots, tuberous root Use category: Food, Medicine
Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.
Comments: Especially important source of vitamin C in spring.

***Ribes aureum* Pursh**

Nez Perce name: **kál**
Plant family: Grossulariaceae English name: golden currant
Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.
Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.
Plant parts used: bark, fruits Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.
Other plants used in similar ways: Food: Rice

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Hunn, E. S. 1990. Nch'i-Wana: The Big River, Mid-Columbia Indians and Their Land. University of Washington Press. Seattle. 378 pp.

Summary: Hunn's book is a broad analysis of the Sahaptin groups of the mid-Columbia Plateau and their relationships with the land. It presents information on ethnobiology and ecology; the nutritional value of native foods, gathering and preparation methods, and medicinal and technologically important plants. There are many drawings/photographs of plants and plant use; Table 8 compares plant food gathering in six Plateau groups; Table 15 compares nutrient content of important foods. While most ethnographers have emphasized the political and economic influence of the Nez Perces among Plateau groups, Hunn presents a different perspective. He proposes that the Nez Perces were not particularly powerful or influential.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Hunn's book does not focus on the area considered to be traditional Nez Perce territory, but the Nez Perces shared many environmental and cultural similarities with the Sahaptin groups discussed in the book. Also, Hunn includes comparative information about plant use by the Nez Perces.

Implications for future management of Nez Perce National Historical Park lands: The material in Hunn's book raises questions about broad issues of land use, habitat change, and availability of resources.

About the author: Hunn, Eugene S.

Author category: Linguistics, ethnobiology, ethnoecology

Background: Professor of Anthropology University of Washington, Seattle; editor Journal of Ethnobiology; Ph.D. University of California, Berkeley 1973

Special interests: Relationships of linguistics and the natural world, ethnobiology, cultural ecology, Plateau cultures

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (109 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Alnus rhombifolia* Nuttall**

Nez Perce name:

Plant family: Betulaceae

English name: white alder

Description: Tree up to 60 ft tall, bark silvery-white, leaves serrate, fruits small dry, wingless, in small cones.

Habitat: Along permanent streams at low to high elevations of inland Northwest US, California, British Columbia, Baja California.

Plant parts used: bark, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: stimulating circulation, treating tuberculosis or lymphatic ailments (bark decoction); skin inflammations (leaves). Spiritualism: stems for incense

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Aquilegia formosa Fischer ex DeCandolle

Nez Perce name: **yeqehthe?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a basal rosette, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Ceanothus velutinus Douglas var. velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

Chimaphila umbellata (Linnaeus) Barton var. occidentalis (Rydberg) Blake

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

Cymopterus terebinthinus* (Hooker) Torrey & Gray var. *terebinthinus

Nez Perce name:

Plant family: Apiaceae

English name: turpentine cymopterus

Description: Short perennial from a taproot, stems and leaves spreading along surface to form rounded mound; leaves resinous-scented, shiny yellow-green, finely dissected; flowers small, yellow, in umbrella-shaped clusters; fruits in pairs, dry, with wavy wings.

Habitat: Sandy or rocky places including dunes and talus; lowlands to moderate elevations in interior Washington, Oregon, Idaho, and Montana;

Plant parts used: root

Use category: Medicine

Specific uses: Medicine: treating sores, colds.

Special preparation: Medicine: the roots were chewed.

Comments: Easily confused with lomatiums.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderales*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at

base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried

bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisiimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried

root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Ligusticum grayi* Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: licorice-root

Description: Herbaceous perennial from a taproot, with fernlike leaves and small white flowers in an umbrella-shaped cluster.

Habitat: In more or less moist places, open or forested, at middle to high elevations in montane and interior Washington, Oregon, California, Idaho, and Nevada.

Plant parts used: root

Use category: Medicine

Specific uses: Medicine: cough, pneumonia, child's stomachache (root infusion or roots chewed); colds (root infusion, roots chewed, or used in sweat lodge); toothache (root piece placed in cavity)

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: laqáptat

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: cí ci ta

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable;

flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted.

Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing;

fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lupinus leucophyllus* Douglas**

Nez Perce name:

Plant family: Fabaceae

English name: velvet lupine

Description: Velvety-hairy herbaceous perennial from a woody taproot; leaves with five leaflets all attached to stalk at its tip and radiating out like spokes; flowers blue to purple, pea-shaped, in dense narrow pyramid-shaped clusters; fruits pods.

Habitat: Dry grasslands, sagebrush steppe, or open forests at low to moderate elevations; interior western US.

Plant parts used: foliage

Use category: Medicine

Specific uses: Medicine: to treat skin rashes.

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Mimulus guttatus* DeCandolle**

Nez Perce name:

Plant family: Scrophulariaceae

English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often witherred dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.

Confection: root chewed

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils, deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth).

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds Use category: Food, Technology, Medicine
Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).
Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal
Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.
Other plants used in similar ways: Food: *Perideridia bolanderi*.
Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**
Plant family: Hydrangeaceae English name: mock-orange, syringa
Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.
Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.
Plant parts used: wood, leaves, flowers Use category: Technology, Medicine
Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).
Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.
Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**
Plant family: Poaceae English name: reedgrass, "common reed"
Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.
Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.
Plant parts used: upright stems, sap, shoots, leaves Use category: Food, Technology, Medicine, Cosmetic, Confection
Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.
Special preparation: Technology: the leaves were dried, soaked, and split for basketry
Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.
Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.
Comments: Leaves commonly used in imbrication of cedar baskets.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin

conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Polygonum phytolaccifolium* Meisner**

Nez Perce name:

Plant family: Polygonaceae

English name: fleecflower

Description: Herbaceous perennial from fleshy base; leaves long, narrow; flowers small, in branched clusters.

Habitat: Meadows and other moist places, subalpine to alpine; northwest US, California, and Nevada.

Plant parts used: roots, seeds

Use category: Food

Specific uses: Food: roots, seeds.

Special preparation: Food: roots were roasted or boiled. Seeds were eaten whole or ground into flour

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth

recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pterospora andromedea* Nuttall**

Nez Perce name:

Plant family: Ericaceae

English name: pinedrops

Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.

Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.

Plant parts used: whole plant

Use category: Technology, Medicine

Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.

Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: táxs

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: táxs

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry.

Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as soak)

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for

cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply.
Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Vaccinium* spp.**

Nez Perce name: cemítk

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: ku ye

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Veratrum spp.

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: yé ye

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Hunn, E. S., and D. H. French. 1998. **Western Columbia River Sahaptins**. Pp. 378-394 in Walker, Jr., D.E. (ed.). **Handbook of North American Indians v. 12. Plateau**. Smithsonian Institution, Washington, DC.

Summary: Hunn and French have been learning the ways of the middle Columbia Sahaptin people for many years. Their studies have resulted in considerable knowledge about these cultures, and that is reflected in this chapter. The importance of plants is evident in the discussions on subsistence, technology, and structures. Figure 4 includes photographs of a tule mat and tule shelters and Figure 10 documents a First Foods celebration.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: The Nez Perce people followed the highly mobile way of life characteristic of Columbia Plateau cultures.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hunn, Eugene S.

Author category: Linguistics, ethnobiology, ethnoecology

Background: Professor of Anthropology University of Washington, Seattle; editor Journal of Ethnobiology; Ph.D. University of California, Berkeley 1973

Special interests: Relationships of linguistics and the natural world, ethnobiology, cultural ecology, Plateau cultures

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (49 total)

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied)

externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderales*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisiimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled.

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant,

antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking.

Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

Ribes aureum Pursh

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex venosus* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium globulare Rydberg

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

Vaccinium membranaceum Douglas ex Torrey

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium scoparium Leiberg

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Valeriana edulis Nuttall ex Torrey & Gray

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Hunn, E. S., N. J. Turner, and D. H. French. 1998. **Ethnobiology and Subsistence**. Pp. 525-545 in Walker, Jr., D.E. (ed.). **Handbook of North American Indians v. 12. Plateau**. Smithsonian Institution, Washington, D.C.

Summary: The long-awaited Plateau volume of the Smithsonian's Handbook of North American Indians contains many references to plant use, but this chapter focuses on the relationships of Plateau peoples with the biotic environment. The authors review food plants, plants used in technology, and plants used in medicine and ritual. They also emphasize that Plateau cultures' recognition of taxa closely corresponds to the Euroamerican scientific taxonomy. Sometimes Plateau cultures recognize more than one kind within a single Euroamerican taxon, and the Plateau classification systems involve only minimal hierarchical structure (e.g. the Euroamerican family, genus, species). Plateau systems also do not much consider life-form (e.g. tree, shrub, herbaceous perennial). The chapter stresses that many Plateau groups derived over 50% of their food energy from root foods, in contrast with a prevalent anthropologic assumption that fishing and hunting were the primary base of subsistence. Black and white photographs illustrate processing of bitterroot (Fig. 1, p. 527), camas roasting (Fig. 2, p. 528), peeling bark (Fig. 6, p. 531) and other subsistence activities. Table 1 (p. 536) summarizes medicinal uses of some plants.

Methodology: Library research, previous field work/interviews

Significance to Nez Perce ethnobotany: This is a thorough summary of the importance of plants and animals in Plateau cultures. It includes only a few specific references to the Nez Percés, but most of the plants mentioned were used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

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Author category: Linguistics, ethnobiology, ethnoecology

Background: Professor of Anthropology University of Washington, Seattle; editor Journal of Ethnobiology; Ph.D. University of California, Berkeley 1973

Special interests: Relationships of linguistics and the natural world, ethnobiology, cultural ecology, Plateau cultures

Methodology: Library research, previous field work/interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (111 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: pícpic

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots Use category: Beverage, Medicine, Insect repellent
Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.
Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever
Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Agoseris glauca* (Pursh) Rafinesque**

Nez Perce name:
Plant family: Asteraceae English name: mountain-dandelion
Description: Herbaceous perennial with succulent taproot, plant with milky juice; leaves glaucous, linear or sometimes with narrow lateral lobes; flowers yellow in a single dense head, with rays and disc flowers; fruit an achene with a long narrow beak topped by a feathery tuft of bristles.
Habitat: Moist meadows to dry steppe at low to high elevations; widespread in western North America.
Plant parts used: whole plant, latex Use category: Medicine, Confection
Specific uses: Medicine: skin wash (plant infusion); poultice (milky sap); laxative (root infusion) removing warts (milky sap). Confection (milky sap chewed).
Special preparation: Confection: latex dried for chewing

***Allium acuminatum* Hooker**

Nez Perce name:
Plant family: Liliaceae English name: tapertip onion
Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.
Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.
Plant parts used: bulbs Use category: Food
Specific uses: Food: flavoring, condiment, supplemental food.
Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.
Other plants used in similar ways: Food: *Allium* spp

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx
Plant family: Betulaceae English name: mountain alder
Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.
Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.
Plant parts used: bark, branches, leaves Use category: Technology, Medicine
Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).
Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root

decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a basal rosette, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, B.C., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló ʔas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderales*

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with “pinched” tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in “pudding.” Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten (“The natives reckon the root unfit for food.” Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat “seeds” on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat “seeds” on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion; to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a *basal cluster*; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent;

saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisiimsege**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: **písq̄u**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msít (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled);

ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots

eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves

smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out.

Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.

Confection: root chewed

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils, deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth).

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phalaris arundinacea* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: reed canary grass

Description: Aggressive tall perennial grass from spreading rhizomes; flowers in a dense branched cluster.

Habitat: Wet places, especially in deep fine-textured soil, at various elevations; North America and Eurasia, introduced in some areas.

Plant parts used: stems, leaves

Use category: Technology

Specific uses: Technology: split stems for imbrication on baskets.

Special preparation: Technology: stems were soaked in boiling water and dried in sun to bleach them. Dried stems were split and rehydrated for use. Some groups used the stems for matting

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive,

caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit)

decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.
Plant parts used: whole plants, leaves Use category: Food, Medicine
Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)
Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.
Comments: peppery taste; introduced plant.

Rosa spp.

Nez Perce name: **tá msas**
Plant family: Rosaceae English name: wild rose
Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.
Habitat: Circumboreal; moist mesic areas, moist grasslands.
Plant parts used: roots, inner bark, foliage, fruits Use category: Food, Beverage, Medicine, Spiritualism
Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.
Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter
Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.
Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**
Plant family: Rosaceae English name: red raspberry
Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.
Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.
Plant parts used: roots, leaves, fruits Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).
Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes
Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:
Plant family: Rosaceae English name: blackcap raspberry
Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.
Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits Use category: Food, Technology, Medicine
Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).
Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled
Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtlá x**
Plant family: Rosaceae English name: thimbleberry
Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.
Habitat: Forests, open areas, lowlands to high elevations; western North America.
Plant parts used: young shoots, insect galls, leaves, fruits Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).
Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.
Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**
Plant family: Rosaceae English name: Pacific blackberry
Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.
Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.
Plant parts used: leaves, fruits Use category: Food, Beverage, Technology
Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.
Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea
Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rumex venosus* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: táxs

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: táxs

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry.

Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as soak)

***Sambucus cerulea* Rafinesque**

Nez Perce name: míttip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in

bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split.

For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Percés preferred to collect these berries in the subalpine fir zone.

Vaccinium membranaceum Douglas ex Torrey

Nez Perce name: **cemífk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium scoparium Leiberg

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

Valeriana edulis Nuttall ex Torrey & Gray

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Veratrum viride Aiton

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorus.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: yé ye

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (poultice); emetic (decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Hunn, Eugene S. 1999. Mobility as a factor limiting resource use on the Columbia Plateau. Pp. 156-172 in D.D. Goble and P.W. Hirt (eds.). Northwest Lands, Northwest Peoples: Readings in Environmental History. University of Washington Press, Seattle.

Summary: This chapter analyzes resource management and movement patterns on the Columbia Plateau. Hunn concludes that the apparent lack of resource management practices among traditional Plateau cultures is a consequence of their high mobility and that they did not manage food resources because they did not need to. However, the next chapter in this book presents a somewhat different view (Marshall 1999).

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany:

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hunn, Eugene S.

Author category: Linguistics, ethnobiology, ethnoecology

Background: Professor of Anthropology University of Washington, Seattle; editor Journal of Ethnobiology; Ph.D. University of California, Berkeley 1973

Special interests: Relationships of linguistics and the natural world, ethnobiology, cultural ecology, Plateau cultures

Methodology: Library research, previous field work/interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp.; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Cornus sericea Linnaeus var. sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mothers milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried

root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

Vaccinium membranaceum Douglas ex Torrey

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Hunter, G.L.K., and J. Tuba. 1943. Note on rose hips and evergreens as sources of vitamin C. Canadian Medical Association Journal 48: 30-32.

Summary: This paper resulted from one of the wartime studies aimed at finding native sources of vitamin C to improve health. An average rose hip contains 10 mg of ascorbic acid, which equals the amount in a good orange. Conifer leaves contain less ascorbic acid than rose hips but still 3-5 times the amount in orange juice. Both rose hips and conifers are important local winter sources of this vitamin.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The study includes three plants known to have been used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Hunter, George L.K.

Author category: Organic Chemistry

Background: Project Director. Ph.D. Ohio State University 1956, MS 1952; BS University of Miami 1951

Special interests: Plant food chemistry, nutrition and flavor

Methodology: Thin-layer chromatography, gas chromatography, spectroscopy

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, o relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Rosa* spp.**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

James, C. 1996. Nez Perce Women in Transition. University of Idaho Press. Moscow. 245 pp.

Summary: Most publications about Nez Perce history focus on battles and therefore on men. This book is a sensitive discussion of Nez Perce women's contributions to their culture and history since the 1877 Nez Perce war and the lives of contemporary Nez Perce women. Chapter Two, Women as Providers, includes an overview of plants collected and used by Nez Perce women for food, technology, medicine, and spiritual needs. Historical photographs illustrate activities of Nez Perce women, including digging and preparing camas (Figures 2.5, 2.6, 2.7, 2.8). Figure 3.6 shows large flat cornhusk bags filled with root foods and berry baskets (part of a wedding trade), and Figure 2.21 illustrates a tule mat lodge. There are a few botanical misinterpretations in this work (e.g. "wild onions" are identified as *Allium* but it is clear from the description that the plant being discussed is *Lomatium canbyi* and/or *L. grayi*, and the cottonwood mushroom (*Tricholoma populinum*) is called *Agaricus*). There is also some confusion between balsamroot and annual sunflowers. The statement that "mats were not woven" is not true. Many photographs are not of sharp clarity due to reproduction methods.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: Plant references appear throughout the book, since Nez Perce women's daily activities involved close association with plants.

Implications for future management of Nez Perce National Historical Park lands: Several traditional gathering sites are mentioned: Weippe Meadows, Camas Prairie, the Palouse Prairie around Moscow, Elk City, and the Grande Ronde River (all camas-digging areas); Grangeville, Pierce, Weippe, China Point, and the Bitterroot Mountains (berry picking areas); Mount Adams (huckleberries); Harpster's Way near Grangeville (blackberries); Orofino and higher along the Clearwater River (serviceberries).

About the author: James, Caroline

Author category: Anthropology

Background: Research Associate University of Idaho; Ph.D. Washington State University, Pullman

Special interests: Women's roles

Methodology: Interviews, library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (40 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently

and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Crataegus columbiana T. Howell

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

Crataegus douglasii Lindley

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Lewisia redeviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots

eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington/northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú 1x**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Ponderosa pine bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for

digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots

to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including

bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage pieces were strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

***Triticum aestivum* Linnaeus**

Nez Perce name: **peqes**

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: what was gleaned from the fields and boiled until the kernels opened

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

James, G. W. 1972 (1909). Indian Basketry. Dover Publications, Inc. New York, NY. 271 pp.

Summary: This is a classic book on Indian basketry, discussing techniques, symbolism, importance, and function. The author compares basketry styles and materials in various regions of North America. Chapter 7 deals with color and Chapter 6 specifically discusses basketry materials, though materials are mentioned in other chapters as well. The book uses unacceptable terms to refer to Native Americans (e.g. savage) but unfortunately this was not unusual even in the early 1900's, when the book was written.

Methodology: Field, library, and museum research

Significance to Nez Perce ethnobotany: Nez Perce basketry is mentioned on pp. 79 and 93. The book mentions 15 plants that have been used in Nez Perce basketry.

Implications for future management of Nez Perce National Historical Park lands:

About the author: James, George W.

Author category: Art, writing

Background:

Special interests: Indian art, photography, Southwest US

Methodology: Field, library, and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (14 total)

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhus glabra* Linnaeus**

Nez Perce name: **tíltítítít**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour. Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Johns, T., and I. Kubo. 1988. A survey of traditional methods employed for the detoxification of plant foods. *Journal of Ethnobiology* 8(1): 81-129.

Summary: Indigenous groups worldwide have developed methods of treating "toxic" plant products to make them suitable as foods. This paper groups these methods into seven general categories: heat, leaching in water, fermentation, adsorption, drying, physical processing, and Ph.D. change. The authors also suggest possible mechanisms by which detoxification methods were discovered. Table 1 lists the plants included in the survey and indicates how they were processed by various indigenous peoples.

Methodology: Library research, chemical analysis

Significance to Nez Perce ethnobotany: The survey includes seven plants known to have been used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Johns, Timothy

Author category: Nutrition

Background: Associate Professor Human Nutrition, Associate Director Centre for Indigenous People's Nutrition and Environment, School of Dietetics and Human Nutrition, Macdonald College of McGill University, Quebec, Canada. Ph.D. University of Michigan; M.S. University British Columbia; B.Sc. McMaster

Special interests: Patterns of indigenous food use, evolution of diet and medicine, human chemical ecology, ethnobotany

Methodology: Library research, chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (8 total)

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilílix**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently

and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens. Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried

bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Johnson, C. G. 1993. Common Plants of the Inland Pacific Northwest. USDA Forest Service R6-ERW-TP051-93: 389 pp. USDA Forest Service Pacific Northwest Region, Washington, D.C.

Summary: This top-quality manual was published to help forest service employees with plant recognition and habitat classification but also for general use by people interested in plants and the uses of plants. Each plant has a thorough description and is illustrated with a good color photograph and a line drawing. The description includes information on ornamental, wildlife, and grazing value/tolerance, fire response, and use by humans, especially traditional Native American use. The book is organized by plant growth habit (Trees, Shrubs, Grasses and Sedges, Forbs) and then alphabetically by genus. An index of common names is also provided.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The manual cites Native American uses for 42 species and specifically mentions Nez Perce use of 18 species.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Johnson, Charles G.

Author category: Plant ecology

Background: Ecologist, Wallowa-Whitman National Forest

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (69 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern.

Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: wapalwá pal

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever
Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos nevadensis* A. Gray**

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: leaves, berries

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides.

Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Aster conspicuus* Lindley**

Nez Perce name:

Plant family: Asteraceae

English name: showy aster

Description: Herbaceous perennial from rhizomes; leaves large, ovate, sharply toothed, thick and firm; flowers in dense heads, rays blue to purple.

Habitat: Open woods in the foothills to moderate elevations in the mountains; boreal western North America south to northern Wyoming.

Plant parts used: roots, leaves

Use category: Medicine

Specific uses: Medicine: Skin problems, venereal disease (root infusion)); boils (leaf poultice); hemorrhoids (root infusion externally or leaf poultice); toothache (roots).

Special preparation: Medicine: plants were brewed for an infusion

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilíix**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root

decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves Use category: Beverage, Medicine, Smoking
Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.
Special preparation: Beverage: the plants were boiled for a refreshing cold drink
Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Elymus elymoides* (Rafinesque) Swezey**

Nez Perce name:
Plant family: Poaceae English name: bottlebrush squirreltail
Description: Herbaceous perennial cespitose grass.
Habitat: Dry grasslands, shrub-steppe, and open dry forests; interior western US at low to high elevations.
Plant parts used: stems and leaves Use category: Technology
Specific uses: Technology: used in grass mats.
Special preparation: Technology: bundles of stems were used with other grasses for warps in matting.
Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Hesperostipa comata*.
Comments: Formerly called *Sitanion hystrix*.

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:
Plant family: Polygonaceae English name: parsnip-flowered wild buckwheat
Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.
Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.
Plant parts used: root, leaves, young flowering stems Use category: Food, Beverage, Medicine, Spiritualism
Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.
Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**
Plant family: Rosaceae English name: woods strawberry
Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.
Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.
Plant parts used: whole plant, fruits Use category: Food, Beverage, Medicine, Cosmetic
Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf

decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisimseqe**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae English name: twinflower
Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.
Habitat: Forests at low to moderate elevations, circumboreal.
Plant parts used: leaves or entire plant Use category: Medicine
Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).
Special preparation: Medicine: the plants were gathered in summer

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**
Plant family: Apiaceae English name: kouse, cous
Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.
Plant parts used: tuberous root Use category: Food, Medicine
Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).
Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying
Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:
Plant family: Caprifoliaceae English name: black twinberry
Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.
Habitat: Moist to wet spots at low to high elevations in western North America.
Plant parts used: bark, stems/leaves, fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).
Special preparation: Food: fruits were dried and stored for winter use

***Opuntia polyacantha* Haworth**

Nez Perce name: ?ístis
Plant family: Cactaceae English name: prickly-pear cactus
Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.
Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.
Plant parts used: roots, pads, fruits, spines
Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Physocarpus malvaceus* (Greene) Kuntze**

Nez Perce name:

Plant family: Rosaceae

English name: ninebark

Description: Tall shrub with alternate three-five lobed maple-shaped leaves; flowers white, in dense round clusters; fruits clustered dry capsules.

Habitat: Moderate elevations; northern inland western US and southern Canada.

Plant parts used: stems

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots. Medicine: twigs for emetic. Spiritualism: washing hunting equipment, especially arrows, for protection from spells, charm to inflict bad luck on enemies.

Special preparation: Food: roots were steam cooked

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes

crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch);

to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum phytolaccifolium* Meisner**

Nez Perce name:

Plant family: Polygonaceae

English name: fleecyflower

Description: Herbaceous perennial from fleshy base; leaves long, narrow; flowers small, in branched clusters.

Habitat: Meadows and other moist places, subalpine to alpine; northwest US, California, and Nevada.

Plant parts used: roots, seeds

Use category: Food

Specific uses: Food: roots, seeds.

Special preparation: Food: roots were roasted or boiled. Seeds were eaten whole or ground into flour

***Prunus virginiana* Linnaeus**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage:

leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: teqsté qs

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhus glabra* Linnaeus**

Nez Perce name: tilitilitit

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes cereum* Douglas**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta x tá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Salix scouleriana* Barratt**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at

base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).

Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Spiraea betulifolia* Pallas**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf spiraea

Description: Tall shrub with ovate leaves; flowers white or cream-colored, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Woods or open hillsides, wet or dry, from sea level to high elevations; inland northern and central US and adjacent Canada east to Saskatchewan, South Dakota, and Wyoming.

Plant parts used: leaves

Use category: Beverage, Medicine

Specific uses: Beverage: leaves for tea. Medicine: stomach ailments (leaf infusion, whole plant infusion, or root/leaf decoction); inflammation, fever, colds (leaf infusion); colds, poor kidneys, ruptures, pain relief (e.g. menstrual pain, abdominal pain) (branch infusion); diarrhea (root/leaf decoction); venereal disease (leaf infusion or leaf/branch decoction)

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges,

paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

Veratrum viride Aiton

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

Verbascum thapsus Linnaeus

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Johnson, L. 1999. The Hand Game: The Native American Game of Power and Chance. Videotape in production. 70 min.

Summary: Johnson's film describes this very popular Native American game and includes scenes of the game among various groups including the Coeur d'Alene. People interviewed in the film discuss traditions of the game and contemporary modifications.

Methodology: Interviews, observation

Significance to Nez Perce ethnobotany: The counter sticks used in this game were usually willow, and traditionally the singing was accompanied by beating sticks on a log or hitting sticks together. The film includes mention of tule mat longhouses at The Dalles.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Johnson, Lawrence

Author category: Documentary films

Background: Independent filmmaker

Special interests: Western Indians

Methodology: Interviews, observation

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Johnson, O. W. 1969. Flathead and Kootenay: The Rivers, the Tribes and the Region's Traders. The Arthur H. Clark Company. Glendale, CA. 392 pp.

Summary: "The Flathead Indians and the Kutenai Indians knew the smell of sagebrush as keenly as they knew the smell of pine and alpine fir." This is the beginning of Johnson's historical treatment of the Flathead and Kutenai peoples, and it summarizes their environment. The territory of these peoples had abundant camas and bitterroot but lacked the diversity of other root foods that typified most Columbia Plateau cultures. Johnson's book devotes more space than most to cultural traditions before Euroamerican contact. It describes everyday life and ceremonies such as the large midwinter festival. Part of this was the four-day Flathead Camas Dance, a celebration praying for an adequate supply of plant foods in the spring (pages 125-126). There is a photograph of tule mat tipi on page 85.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: Plants were less important in the traditional Flathead and Kutenai diet than in the Nez Perce diet but the two important root foods were also important to Nez Perce people, and fruits and medicinal plants were similar.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Johnson, Olga W.

Author category: History

Background: Libby, MT

Special interests: history, Natural History

Methodology: Interviews, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (24 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated,

straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to “break” grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, “Indian-hemp”

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow “pods” in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, “cornhusk” bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **páxs, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; “seeds” eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys’ feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery (“seeds” eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The “seeds” were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea Linnaeus var. sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

Fragaria virginiana Duchesne

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf

decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems/leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves

smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus tremuloides* Michaux**

Nez Perce name: nisá·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood , shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rubus idaeus Linnaeus

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus ursinus Chamisso & Schlechtendal

Nez Perce name: cimú xcimux cimú k

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Sambucus cerulea Rafinesque

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine:

emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in

baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Josephy, A. M. 1971. *The Nez Perce Indians and the Opening of the Northwest*. Yale University Press. New Haven, CN. 667 pp.

Summary: Josephy's book is an account of contact and conflicts between the Nez Perce people and Euroamericans. Chapter 1 describes William Clark's first encounter with Nez Perce people in 1805 and their kindness to the Corps of Discovery. The book also includes brief descriptions of root-digging gatherings in and near the Wallowa Valley (pp. 445, 511, 578) and trade of Nez Perce plant products with other groups (pp. 30-31). Especially interesting is a brief discussion of "The Medicine Tree," a Bitterroot Valley ponderosa pine tree of special spiritual power (p. 576). In the introductory chapter on pages 16-18 Josephy mentions Nez Perce bark capes, twined basketry, pit houses and mat lodges, and plant foods. He also comments on the determination of the Nez Perce people to resist conversion to an agricultural economy.

Methodology: Library research

Significance to Nez Perce ethnobotany: This book is primarily a historical account but mentions some plants traditionally important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands: Josephy discusses the large gatherings held in the camas meadows around Tolo Lake.

About the author: Josephy, Alvin M Jr.

Author category: History

Background: Chair, Board of the National Museum of the American Indian; author of several books concerning Indian-Euroamerican contacts and conflicts

Special interests: Indian history

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (8 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Josephy, A. M. 1983. Nez Perce Country: A Handbook for Nez Perce National Historical Park, Idaho. Division of Publications Handbook 121: 223 pp. National Park Service, US Department of the Interior, Washington, DC.

Summary: This book summarizes Nez Perce culture history, social and economic organization, and history, and presents a gazetteer to the Historical Park. Plant use for food and technology is summarized. Illustrations involving plant use: page 20 (cornhusk bags), page 193 (basketry hat), and page 205 (diagram of camas oven).

Methodology: Library and field research, oral history

Significance to Nez Perce ethnobotany: This guide mentions a good number of plants important to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Josephy, Alvin M Jr.

Author category: History

Background: Chair, Board of the National Museum of the American Indian; author of several books concerning Indian-Euroamerican contacts and conflicts

Special interests: Indian history

Methodology: Library and field research, oral history

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (27 total)

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Equisetum hyemale Linnaeus

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum palustre* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: marsh horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to persistent black teeth with white margins; reproducing by spores borne in cones.

Habitat: Wet places of the lowlands to mid-elevations in the mountains; circumboreal and south to south Washington, northern Idaho, northwest Montana, Nevada, and Pennsylvania.

Plant parts used: rhizomes, stems

Use category: Food, Technology

Specific uses: Technology: stems for scouring, sandpaper; rhizomes for basketry imbrication (black iridescent color). Medicine: diuretic (stem infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum laevigatum*

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter

they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhoea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae English name: lomatium, bitterroot, desert-parsley
Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.
Habitat: Dry and mesic areas of western North America.
Plant parts used: roots Use category: Food.
Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.
Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**
Plant family: Apiaceae English name: yampa, Indian-carrot
Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.
Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.
Plant parts used: roots, seeds Use category: Food, Technology, Medicine
Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).
Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal
Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.
Other plants used in similar ways: Food: *Perideridia bolanderi*.
Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**
Plant family: Hydrangeaceae English name: mock-orange, syringa
Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.
Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.
Plant parts used: wood, leaves, flowers Use category: Technology, Medicine
Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).
Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.
Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Taxus brevifolia Nuttall

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Keely, P. B. 1980. Nutrient Composition of Selected Important Plant Foods of the pre-Contact Diet of the Northwest Native American Peoples. MS Thesis (Nutrition), University of Washington. Seattle. 115 pp.

Summary: Keely surveyed the nutrient content of some important Northwest native foods and made comparisons with commercially available analogues. His conclusions were that in the interior Northwest root foods may have contributed 31% of the US Recommended Daily Allowance (RDA) for protein, 200% of the RDA for Fe, 17% of the RDA for Ca, 12% of the RDA for Mg, 17% of the RDA for zinc. He further concludes that root foods "may have been" an important source of Ca, Fe, Mg, and zinc [almost certainly they were]. Fresh spring shoots of lomatiums and other plants "may have been" an important source of vitamin C (See Hunn and French 1981 for discussion of the importance of lomatiums in the traditional Columbia Plateau diet). Keely concludes that native fruits may have contributed 11% of the RDA for protein, 12% of the RDA for iron, 7% of the RDA for Magnesium, 7.5% of the RDA for Zinc, and 430% of the RDA for vitamin C. He also states that native fruits may have contributed 15% of the RDA for Calcium (actually fruits probably contributed a much greater percentage the Calcium requirement; certain Calcium-rich fruits were not included in this study, e.g. hackberry (*Celtis reticulata*)). Table 1 summarizes nutrient content of the foods analyzed. Keely believes Scrimsher's analysis of camas bulbs containing 34% protein must result from a misplaced decimal point.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: This study is an analysis of the probable contributions of various native foods to nutrition and thus helps our understanding of the traditional Nez Perce diet.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Keely, Patrick B.

Author category: Nutrition

Background: MS in Nutrition, University Washington, Seattle 1980

Special interests: Nutrient composition of indigenous foods, comparison with contemporary commercial foods

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (30 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and

conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.

Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis nervosa* Pursh**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Holidiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

Ledum groenlandicum Oeder

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.
Plant parts used: early spring shoots (first greens); root Use category: Food
Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.
Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled
Nutritional value: Shoots 15 mg vitamin C per 100 g.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.
Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:
Plant family: Apiaceae English name: potato biscuitroot, "Indian-potato"
Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.
Plant parts used: tuberous root Use category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.
Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú tx**
Plant family: Apiaceae English name: Salmon River desert-parsley
Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.
Plant parts used: leafy shoots, tuberous root Use category: Food, Medicine
Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.
Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**
Plant family: Apiaceae English name: yampa, Indian-carrot
Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes lacustre* (Persoon) Poiré**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)
Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.
Other plants used in similar ways: Food: *Ribes* spp

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**
Plant family: Rosaceae English name: thimbleberry
Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.
Habitat: Forests, open areas, lowlands to high elevations; western North America.
Plant parts used: young shoots, insect galls, leaves, fruits Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).
Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.
Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals. The Nez Percés preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**
Plant family: Rosaceae English name: Pacific blackberry
Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.
Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.
Plant parts used: leaves, fruits Use category: Food, Beverage, Technology
Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.
Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea
Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Sagittaria latifolia* Willdenow**

Nez Perce name:
Plant family: Alismataceae English name: wapato
Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Sambucus cerulea* Rafinesque**

Nez Perce name: miftip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Smilacina racemosa (Linnaeus) Desfontaines

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to

scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Keely, P. B., C. S. Martinson, E. S. Hunn, and H. H. Norton. 1982. Composition of native American fruits in the Pacific Northwest. Journal of the American Dietetic Association 81: 568-572.

Summary: Selected native Northwest fruits were analyzed for nutrient content. The authors conclude that plants provided 60% of the caloric intake of Native interior people and estimate these people consumed 400 grams of fruits per day. They suggest percentage contributions of native fruits to the Recommended Daily Allowances for vitamin C and minerals, but several important interior fruits were not included in the study. Table 2 summarizes the results of the analysis of native fruits and compares their nutrient content with that of contemporary commercial fruits.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The study includes four plants known to have been used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Keely, Patrick B.

Author category: Nutrition

Background: MS in Nutrition, University Washington, Seattle 1980

Special interests: Nutrient composition of indigenous foods, comparison with contemporary commercial foods

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta x'tá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Percés preferred to collect thimbleberries at higher elevations.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

Kennedy, D. ID., and R. T. Bouchard. 1998. Northern Okanogan, Lakes, and Colville. Pp. 238-252 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Lifeways of the Northern Okanogan, Lakes, and Colville people are summarized in this chapter. The discussion of plants is based largely on Teit's work with these groups. Figure 2 illustrates collection of ponderosa pine inner bark for food; Figure 3 illustrates dried bitterroots; Figure 4 is a photograph of a tule tipi alongside a canvas tipi; and Figure 7 shows several items of clothing made from plant fibers.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Like the Nez Percés, these northern Plateau cultures held First Roots and First Fruits ceremonies, and they used many of the same plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Kennedy, Dorothy I.D.

Author category: Anthropology

Background: British Columbia Indian Language Project, Victoria, British Columbia

Special interests: Northern Columbia Plateau/Fraser Plateau peoples

Methodology: Field and library research

Context: academic

Specific Nez Perce plants discussed in this reference (18 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it

would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis,

other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried

for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion);

anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including

bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

King, T. 1998. The healing, cleansing begin. The Lewiston Morning Tribune Saturday February 20, 1999: 1.

Summary: King's article describes the use of burning sage for cleansing the places where the body and clothing of a Nez Perce teenager had been found.

Methodology: Field observations, interviews

Significance to Nez Perce ethnobotany: This newspaper article illustrates the continuing use of a traditional Nez Perce practice involving a plant.

Implications for future management of Nez Perce National Historical Park lands:

About the author: King, Tara

Author category: journalist

Background: Writer for Lewiston Morning Tribune, Lewiston, Idaho

Special interests:

Methodology: Field observations, interviews

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

Konlande, J. E., and J. R. Robson. 1972. The nutritive value of cooked camas as consumed by Flathead Indians. Ecology of Food and Nutrition 2: 193-195.

Summary: This study analyzes the inulin and simple sugar content of camas bulbs before and after cooking. Nearly all the inulin in the bulbs is converted to sugars by the traditional pit-steaming process. The paper also describes the traditional pit-cooking process. Table 1 lists the chemical composition of raw camas bulbs and Table 3 compares the sugar content of raw and cooked bulbs.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: This study is significant to understanding the nutritional value of camas to the Nez Percés and the importance of their cooking methods in "releasing" simple sugars. Nez Perce methods of camas preparation were closely similar to those of the Flatheads.

Implications for future management of Nez Perce National Historical Park lands: Traditional camas-digging grounds have mostly been destroyed through agriculture, and the paper suggests the importance of protecting remaining camas areas.

About the author: Konlande, James E.

Author category: Nutrition

Background: Staff writer Agriverv Foundation; Associate Professor Home Economics Winthrop College; Assistant Professor of Nutrition University of Michigan; Scientific Education Information Service for Grolier, Inc.; high school teaching; Ph.D. Rutgers University 1971, MS 1969; B.A. Brooklyn College 1958

Special interests: Nutritional composition analysis of foods; hormonal effects on nutrient utilization; protein metabolism; nutritional deficiency diagnosis

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Kuhnlein, H. V. 1984. Nutritional value: of traditional food practices. McLoughlin, J.V., and B.M. McKenna (eds.). Proceedings of the 6th International Congress of Food Science and Technology 4: 63-71. Boole Press

Summary: This chapter discusses how preparation methods of traditional foods detoxify poisonous substances and otherwise influence nutritional content. It also compares the nutritional value of certain traditional foods with common contemporary foods. Table 5 lists vitamin C and Calcium content of various fruits.

Methodology: Chemical analysis, field and library research

Significance to Nez Perce ethnobotany: This chapter does not directly mention the Nez Perce people but includes two plants known to have been eaten by them, wild strawberries and thimbleberries.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Kuhnlein, Harriet V.

Author category: Nutrition

Background: Professor of Nutrition, Director Center for Nutrition and Environment of Indigenous Peoples, McGill University. Ph.D. University of California, Berkeley 1976; MS Oregon State University 1969; BS Pennsylvania State University 1961

Special interests: Nutrition of indigenous peoples and nutrition and environment

Methodology: Chemical analysis, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

Kuhnlein, H. V., and N. J. Turner. 1986. Cow-parsnip (*Heracleum lanatum*): an indigenous green vegetable of Native people of northwestern North America. *Journal of Ethnobiology* 6(2): 309-324.

Summary: Cow-parsnip was an important vegetable food for many Plateau groups, yet the plant contains toxins that cause skin irritation and photosensitization. This paper discusses the nutritional value and toxicity of cow-parsnip, and native processing methods. The authors list Canadian (and nearby U.S.) groups known to have used the plant for food. Table 3 catalogues nutrients in peeled raw cow-parsnip stalks; Table 4 compares toxic compounds in unpeeled and peeled stalks.

Methodology: Chemical analysis, field and library research

Significance to Nez Perce ethnobotany: The paper does not directly mention Nez Perce use of the plant but such use is documented in other studies (Scrimsher 1967).

Implications for future management of Nez Perce National Historical Park lands: Cow parsnip habitat has been impacted by agriculture.

About the author: Kuhnlein, Harriet V.

Author category: Nutrition

Background: Professor of Nutrition, Director Center for Nutrition and Environment of Indigenous Peoples, McGill University. Ph.D. University of California, Berkeley 1976; MS Oregon State University 1969; BS Pennsylvania State University 1961

Special interests: Nutrition of indigenous peoples and nutrition and environment

Methodology: Chemical analysis, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Kuhnlein, H. V., and N. J. Turner. 1991. Traditional Plant Foods of Canadian Indigenous Peoples: Nutrition, Botany, and Use. Gordon and Breach Science Publishers. Philadelphia. 633 pp.

Summary: Kuhnlein and Turner have compiled a thorough summary of indigenous plant foods in Canada, including nutritional information and Comments on other importance of these plants.

Methodology: Field, library, and laboratory research

Significance to Nez Perce ethnobotany: Most of the plants in the book were used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Kuhnlein, Harriet V.

Author category: Nutrition

Background: Professor of Nutrition, Director Center for Nutrition and Environment of Indigenous Peoples, McGill University. Ph.D. University of California, Berkeley 1976; MS Oregon State University 1969; BS Pennsylvania State University 1961

Special interests: Nutrition of indigenous peoples and nutrition and environment

Methodology: Field, library, and laboratory research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (89 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: wupalwá pal

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Agoseris glauca* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Asteraceae

English name: mountain-dandelion

Description: Herbaceous perennial with succulent taproot, plant with milky juice; leaves glaucous, linear or sometimes with narrow lateral lobes; flowers yellow in a single dense head, with rays and disc flowers; fruit an achene with a long narrow beak topped by a feathery tuft of bristles.

Habitat: Moist meadows to dry steppe at low to high elevations; widespread in western North America.

Plant parts used: whole plant, latex

Use category: Medicine, Confection

Specific uses: Medicine: skin wash (plant infusion); poultice (milky sap); laxative (root infusion) removing warts (milky sap). Confection (milky sap chewed).

Special preparation: Confection: latex dried for chewing

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge,

contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing

(pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé ʔe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis nervosa* Pursh**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus* spp.**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled

rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs
Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Cirsium scariosum* Nuttall**

Nez Perce name: **titux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia megarhiza* (A. Gray) Parry ex S. Watson**

Nez Perce name:

Plant family: Portulacaceae

English name: alpine springbeauty

Description: Small succulent herbaceous perennial from a fleshy taproot; leaves in large rosettes, spatula-shaped, delicate; flowers white to deep pink.

Habitat: Gravelly soils, rock crevices, talus, montane inland western North America.

Plant parts used: root

Use category: Food

Specific uses: Food: an occasional food.

Other plants used in similar ways: Food: *Claytonia lanceolata*

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth

recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked. Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimile**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Lewisia rediviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian

Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqá t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf *lomatium*, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)

Nutritional value: 83 mg vitamin C per 100g

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds

(these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth

recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: teqsté qs

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **títítítít**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: **kái**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae English name: wax currant
Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.
Habitat: Lowland shrub steppe to montane forests; inland western North America.
Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine
Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking
Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use category: Food

Specific uses: Food: young shoots for spring greens; fruits

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorus.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorus, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Spiraea betulifolia* Pallas**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf spiraea

Description: Tall shrub with ovate leaves; flowers white or cream-colored, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Woods or open hillsides, wet or dry, from sea level to high elevations; inland northern and central US and adjacent Canada east to Saskatchewan, South Dakota, and Wyoming.

Plant parts used: leaves

Use category: Beverage, Medicine

Specific uses: Beverage: leaves for tea. Medicine: stomach ailments (leaf infusion, whole plant infusion, or root/leaf decoction); inflammation, fever, colds (leaf infusion); colds, poor kidneys, ruptures, pain relief (e.g. menstrual pain, abdominal pain) (branch infusion); diarrhea (root/leaf decoction); venereal disease (leaf infusion or leaf/branch decoction)

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorus

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorus, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Vaccinium globulare Rydberg

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

Vaccinium membranaceum Douglas ex Torrey

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium scoparium Leiberg

Nez Perce name: **?ala?á ta**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Lahren, Jr., S. L. 1998. Kalispel. Pp. 283-296 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: This chapter is a summary of Kalispel culture and history, and it mentions a few important plants. Figure 4 includes a photograph of a tule mat tipi and another of a house roofed with tules, soil, and bark that looks like ponderosa pine. Figure 6 includes a photo showing a tipi frame with tule mats only around the base and a building with a cedar bark roof.

Methodology: Library research

Significance to Nez Perce ethnobotany: The plants mentioned were also important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Lahren, Sylvester L.

Author category: Ethnohistory

Background: Elbert, Colorado

Special interests:

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g;

0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Landeen, D. 1999. **Salmon and His People: Fish and Fishing in Nez Perce Culture.** Confluence Press. Lewiston, ID. 249 pp.

Summary: This beautifully presented book tells the story of salmon in traditional Nez Perce culture and how salmon fishing was affected by development, especially dam construction. Many very interesting Nez Perce stories and tales of individual Nez Perce experiences are included, as well as photographs. Nez Perce people tell about plants that were used in manufacturing fishing gear. The months of the traditional Nez Perce year are discussed on pp. 55-56, including those named in honor of plants.

Methodology: Interviews, field, and library research

Significance to Nez Perce ethnobotany: The book's focus is salmon but important information on plants is included.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Landeen, Dan

Author category: Fish and wildlife biology

Background: Wildlife Biologist for the Nez Perce Tribe of Idaho; Nez Perce representative on the Hanford Natural Resources Trustee Council; Contracting Wildlife Biologist at Hanford

Special interests: Protection of indigenous food animals

Methodology: Interviews, field, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí †**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qáppaq**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*,
Scirpus tabernaemontani.

Comments: Air spaces in leaves provide insulation, buoyancy.

Laughlin, W. S. 1954. Twines and Terminologies. American Anthropologist 56: 1093-1100.

Summary: This technical note discusses methods of making cordage and discusses sources of fiber.

Methodology: Museum and library research

Significance to Nez Perce ethnobotany: This discussion of cordage includes six Nez Perce fiber plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Laughlin, William S.

Author category: Anthropology

Background:

Special interests: Textiles

Methodology: Museum and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Leechman, D. 1972. Camas--A sumptuous feast. The Beaver Summer 1972: 4--7.

Summary: This paper is a general discussion of camas, its names, occurrence, digging and processing methods, and importance in indigenous life. The paper includes Meriwether Lewis and William Clark's Comments on their first taste of camas provided by the Nez Perce people. The author also discusses how the plowing up of camas meadows in the Wallow Valley contributed to the Nez Perce wars. The description of camas-roasting is from information provided by an anonymous Nez Perce girl.

Methodology: Library research

Significance to Nez Perce ethnobotany: This paper includes information provided by contemporary Nez Perce people and documents their camas-roasting methods.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Leechman, Douglas

Author category: Anthropology

Background: Anthropologist with National Museum of Canada, Consulting Anthropologist, Research Associate in Linguistics University of Victoria, British Columbia; Ph.D. University of Ottawa 1940, M.A. 1939, B.Sc. 1937

Special interests: Anthropology of Canada, migration routes, Dorset Eskimo culture

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Lehman-Kessler, M. N. 1985. The Traditional Nez Perce Basketry Hat: Its Modal Style and Cultural Significance. M.A. Thesis, Washington State University. Pullman, WA. 125 pp.

Summary: This thesis analyzes the Nez Perce basketry hat with respect to origin, distribution, function, design, construction techniques, and materials and compares Nez Perce hats with other western North America hats. It includes a review of Nez Perce culture and history. The author mentions that Kamiah, ID was named after dogbane. Figs. 16-22 are photographs illustrating basketry hat construction techniques.

Methodology: Interviews, library and museum research

Significance to Nez Perce ethnobotany: This thesis reviews plant materials used in construction and coloring of basketry hats.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Lehman-Kessler, Marcia N.

Author category: Apparel and Textiles

Background: M.A. Washington State University, Pullman 1985

Special interests: Clothing and culture

Methodology: Interviews, library and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (23 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez

Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Delphinium* spp.**

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection. Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderale*

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sarcobatus vermiculatus (Hooker) Torrey

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Leonhardy, F.C., and D.G. Rice. 1970. A proposed culture typology for the lower Snake River region, southeastern Washington. Northwest Anthropological Research Notes 4(1): 1-29.

Summary: Leonhardy and Rice's analysis of archaeological findings along the lower Snake River has become a cornerstone in understanding cultural changes in that region (and also for much of the rest of the Columbia Plateau). They interpret a sequence of cultural changes beginning with the earliest human records in the area more than 11,000 years ago. They consider housing types, faunal remains and artifact assemblages including plant processing tools and textiles. The cultural chronology they developed is widely accepted.

Methodology: Field, laboratory, and library research

Significance to Nez Perce ethnobotany: This important paper interprets the changing roles of plants for the people of the lower Snake River, including a change from seed foods to root foods and the development of a semisedentary life based on food storage.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Leonhardy, Frank C.

Author category: Archaeology

Background: Washington State University, Pullman

Special interests: Southeast Washington cultural history

Methodology: Field and laboratory analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (none)

Leonhardy, F.C. 1980. Themes in Nez Perce Prehistory. Nez Perce Lyceum, Nez Perce National Historical Park, Spalding, ID. 74 min.

Summary: This is a tape of an outstanding and well-presented discussion by Frank Leonhardy concerning cultural changes in Nez Perce territory during the past 11,000 years. Leonhardy presents the archaeological evidence for these changes and raises questions of why they occurred, especially the change to living in winter villages and storing foods for winter. One theme is the adaptation of people to their environment and the changes through time, and another is the kind of social changes necessitated by changes in movement patterns and food acquisition.

Methodology: Field, laboratory, and library research

Significance to Nez Perce ethnobotany: The cultural changes in Nez Perce territory are strongly related to plant foods, and Leonhardy stresses that learning about appropriate plant foods and useful fiber and technological plants was a much more complicated process than learning about food animals or fish, requiring generations of learning.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Leonhardy, Frank C.

Author category: Archaeology

Background: Washington State University, Pullman

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Methodology: Field and laboratory analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: wood, bark

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Lepofsky, D., K. D. Kusmer, B. Hayden, and K. P. Lertzman. 1996. **Reconstructing prehistoric socioeconomies from paleoethnobotanical and zooarchaeological data: An example from the British Columbia Plateau.** *Journal of Ethnobiology* 16(1): 31-62.

Summary: This study analyzes the distribution, density, and diversity of plant and animal remains in housepits of different sizes. The authors evaluated plant and animal materials as indicators of socioeconomic status, domestic subgroupings, and communality of activities. Large and medium housepits had distinct plant food processing sites and bedding remains around the margins.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The authors' conclusions are applicable over much of the Columbia Plateau, probably including the Nez Perce.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Lepofsky, Dana

Author category: Archaeology

Background:

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (15 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Chenopodium spp.

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Phacelia heterophylla* Pursh**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: varileaf phacelia

Description: Tall densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy, often with two deep lobes at base; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Dry open places, usually sandy or rocky, various elevations; widespread in montane western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: tuberculosis (steam inhaled, plant infusion); colds, fever (steam inhaled); diarrhea, bowel hemorrhage, to facilitate childbirth (plant infusion)

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Populus balsamifera Linnaeus var. trichocarpa (Torrey & Gray ex Hooker) Brayshaw

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

Populus tremuloides Michaux

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Rosa woodsii* Lindley var. *ultrmontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower

petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

Lewis, M. 1844. History of the Expedition Under the Command of Captains Lewis and Clarke to the Sources of the Missouri Thence Across the Rocky Mountains and Down the River Columbia to the Pacific Ocean. Performed During the Years 1804, 1805, 1806 by Order of the Government of the United States. Revised and Abridged by Archibald M'Vickar Vols. I (371 pp.) and II (395 pp.). Harper and Brothers, New York.

Summary: This book is Archibald M'Vickar's presentation of Lewis' journals.

Methodology: Library research

Significance to Nez Perce ethnobotany: Lewis' journal of the Corps of Discovery expedition of 1804-1806 includes the first written record of the importance of plants in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Lewis, Meriwether

Author category: Exploration, military and political service

Background: Learned herbal medicine from mother (an herb doctor); Captain, US Army, private secretary to Thomas Jefferson; diplomat

Special interests: Ways of life of indigenous North Americans, their food plants and animals; promotion of trade, especially fur trade

Methodology: Library research

Context: interpretation of indigenous cultures from Euroamerican context

Specific Nez Perce plants discussed in this reference (14 total)

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried.

Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk.

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Lewis, Walter H., and Memory P.F. Elvin-Lewis. 1977. Medical Botany: Plants Affecting Man's Health. John Wiley and Sons, New York.

Summary: "Medical Botany" is an encyclopedic presentation of the curative, allergenic, poisonous, and psychoactive properties of many plants. What is unusual (and especially valuable) about this book is its detailed information on how medicinally important plants influence human physiological processes. Information is presented in sections corresponding to the plant's action: injurious, remedial, and psychoactive.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Lewis' book includes 40 plants used or avoided by Nez Perce people and provides information on how the human body is affected by these plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Lehman-Kessler, Marcia N.

Author category: Botany

Background: Medical ethnobotany

Special interests: Professor of Biology, Washington University, and Senior Botanist, Missouri Botanical Garden

Methodology: Library and laboratory research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (40 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves Use category: Technology, Medicine
Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).
Special preparation: Bark boiled for coloring, infused for medicine.
Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

Angelica spp.

Nez Perce name:
Plant family: Apiaceae English name: angelica
Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.
Habitat: Moist to wet places at various elevations in North America and northern Asia.
Plant parts used: leaves and roots Use category: Food, Medicine, Technology
Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).
Comments: Plant can be confused with water-hemlock.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**
Plant family: Apocynaceae English name: dogbane, "Indian-hemp"
Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.
Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).
Plant parts used: roots, stem fibers, seeds Use category: Food, Technology, Medicine
Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).
Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.
Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**
Plant family: Ericaceae English name: kinnickinick, bearberry
Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.
Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.
Plant parts used: leaves, berries Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic
Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make then watertight; also

used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Cercocarpus montanus* Rafinesque var. *glaber* (S. Watson) Martin**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf mountain-mahogany

Description: Large shrub or small tree with gnarled growth form; leaves evergreen, broadest near the tip, shiny dark green above, pale beneath, margins toothed; flowers small, without petals, in axillary clusters; fruits small sharp achenes with plume-like persistent style.

Habitat: On rocky hilltops and ridges in dry steppe, canyons, and ridges; inland western North America from central Oregon south and east to the Rocky Mountains and central Mexico.

Plant parts used: wood

Use category: Technology, Medicine

Specific uses: Technology: wood/branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring. Medicine: respiratory problems (bark decoction).

Other plants used in similar ways: Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis

(poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)

Nutritional value: 83 mg vitamin C per 100g

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Physocarpus malvaceus* (Greene) Kuntze**

Nez Perce name:

Plant family: Rosaceae

English name: ninebark

Description: Tall shrub with alternate three-five lobed maple-shaped leaves; flowers white, in dense round clusters; fruits clustered dry capsules.

Habitat: Moderate elevations; northern inland western US and southern Canada.

Plant parts used: stems

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots. Medicine: twigs for emetic. Spiritualism: washing hunting equipment, especially arrows, for protection from spells, charm to inflict bad luck on enemies.

Special preparation: Food: roots were steam cooked

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled

twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage:

leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or

scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice);

tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Percés preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use category: Food

Specific uses: Food: young shoots for spring greens; fruits

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mittip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes,

cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Veratrum* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Lohse, E. S., and D. Sammons-Lohse. 1987. Sedentism on the Columbia Plateau: A matter of degree related to the easy and efficient procurement of resources. Northwest Anthropological Research Notes 20(2): 115-136.

Summary: An archaeological site along Chief Joseph Reservoir in Okanogan County, Washington, was the location of an early pithouse village. The people at this village subsisted primarily on shellfish and meat animals such as deer and apparently did not store food in any large amounts. This paper interprets the site in relation to the development of semisedentism on the Columbia Plateau.

Methodology: Field, laboratory, and library research

Significance to Nez Perce ethnobotany: The use of plant foods is discussed and compared with that at other early village sites in Nez Perce territory.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Lohse, E Skip.

Author category: Anthropology

Background: Interim Director and Curator of Anthropology, Idaho Museum of Natural History; Professor of Anthropology, Idaho State University. Ph.D. University of Utah 1981, M.A. 1977; B.A. California State University, Chico 1975

Special interests: Archaeology

Methodology: Field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Chenopodium spp.

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds.

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

Leymus cinereus (Scribner & Merrill) A. Love

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat

lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage

or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root

decoction); rheumatism (plants wrapped around limb for heating); gonorrhoea (mashed root

infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh,

pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried.

Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;.

Pinus ponderosa Miller

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water

hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

Long, D. E. 1953. A Comparison of the Art and Design of the Basketry and Costumes of the Nez Perce Indians with that of the Northwest Coast Indians. M.A. Thesis, University of Idaho. Moscow, ID. 125 pp.

Summary: This thesis was written from the artistic viewpoint and thus devotes attention to a comparison of basketry styles, techniques, and design elements rather than basketry materials, though a few materials are mentioned. Plates 1-30 are photographs of Nez Perce flat bags; 31-33 are Nez Perce round twined bags and coiled basketry; 34-35 are Nez Perce hats.

Methodology: Library and museum research

Significance to Nez Perce ethnobotany: Long mentions a few common Nez Perce basketry materials.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Long, Dorothy E.

Author category: Art

Background: M.A. University of Idaho

Special interests: native art

Methodology: Library and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Mallory, O. L. 1966. A Comparative Cultural Analysis of Textiles from McGregor Cave, Washington. M.A. Thesis (Anthropology), Washington State University. Pullman. 87 pp.

Summary: Mallory's thesis was based on materials recovered during the 1953 excavations at McGregor Cave along the lower Palouse River, Washington. Mallory summarizes the geologic and geographic setting of the area, general Palouse ethnography, and methods of making cordage. He draws very interesting comparisons of raw materials used for textiles from McGregor Cave with raw materials used in other areas. The high proportion of sedges and grasses used in McGregor Cave textiles is quite unusual. There are also some unusual design features in the McGregor Cave textiles, including twilled borders on large mats.

Methodology: Laboratory and library research

Significance to Nez Perce ethnobotany: The Palouse are very closely related to the Nez Percés and their textiles are very similar.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Mallory, Oscar L.

Author category: Archaeology

Background: Norway House First Nations Band, Native Studies, Norway House, MB. M.A. 1966, Washington State University, Pullman, B.A. 1960

Special interests: Interpretation of archaeological sites, archaeological textiles

Methodology: Laboratory and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Leymus cinereus (Scribner & Merrill) A. Löve

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Prunus virginiana Linnaeus

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mittip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and

lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Malouf, C. 1969. The coniferous forests and their uses in the northern Rocky Mountains through 9,000 years of prehistory. in R.A. Taber (ed.). Coniferous Forests of the Northern Rocky Mountains: Proceedings of the 1968 Symposium : 271-290. Center for Natural Resources, University of Montana Foundation, Missoula, MT.

Summary: Malouf's paper summarizes some of the ways forests were important to Native peoples of the northern Rocky Mountains: food, housing, tools, implements, fuel, transportation, and religion. A table on p. 277 compares pine nut harvesting in the Northern Rockies with that in the Great Basin. Malouf presents a divergent view of how the Native peoples regarded forests ("trees were merely a hindrance to the hunting of big game," p. 271).

Methodology: Library and field research

Significance to Nez Perce ethnobotany: This is a general review of the importance of some forest plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Malouf, Carling I.

Author category: Anthropology

Background: Emeritus Professor of Anthropology, University of Montana, Missoula, 1964--, Associate Professor 1948-1964; Ph.D. Columbia University 1956; MS University of Utah, 1940, BS 1939

Special interests: Archaeology and ethnology of interior western U.S., ethnobotany

Methodology: Library and field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: póhos

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Lewisia rediviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens. Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots

eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Pinus albicaulis* Engelm**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Loudon**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood,

for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Malouf, C. I. 1998. Flathead and Pend d'Oreille. Pp. 297-312 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Like other chapters in this volume of the Handbook of North American Indians, the summary of Pend d'Oreille and Flathead culture includes only sketchy information on important plants. Figure 2 shows bitterroot diggers praying over their collections, and Figure 6 shows people sorting dried huckleberries and the tool used to crush the berries.

Methodology: Library research

Significance to Nez Perce ethnobotany: The plants mentioned were all important in traditional Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Malouf, Carling I.

Author category: Anthropology

Background: Emeritus Professor of Anthropology, University of Montana, Missoula, 1964--
Associate Professor 1948-1964; Ph.D. Columbia University 1956; MS University of Utah, 1940, BS 1939

Special interests: Archaeology and ethnology of interior western U.S., ethnobotany

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried

bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mítip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead

stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Marshall, A. G. 1977. Nez Perce Social Groups: An Ecological Interpretation. Ph.D. dissertation (Anthropology), Washington State University. Pullman. 194 pp.

Summary: Marshall relates subsistence activities to social organization, kinship, spatial dispersion and dispersal, group interdependence, and resource seasonality. He concludes that kinship, social systems, and environmental factors determine settlement patterns. The study describes the 36 most important Nez Perce food plants, their ecology, and their importance to the Nez Perce people.

Methodology: Interviews, participation, field and library research

Significance to Nez Perce ethnobotany: The information is based on lengthy discussions with Nez Perce people who are no longer here. The study documents Nez Perce food plant use in the mid-20th century.

Implications for future management of Nez Perce National Historical Park lands: Management decisions regarding important Nez Perce resource areas can be facilitated by an understanding of how traditional Nez Perce social organization related to the environment.

About the author: Marshall, Alan G.

Author category: Ethnoecology, ethnobiology, ethnography, cultural anthropology

Background: Faculty, Lewis & Clark State College, Lewiston, ID; working with Nez Perce on legal issues. Ph.D. Washington State University, Pullman 1977; B.A. 1967, University of Minnesota

Special interests: Nez Perce social structure as related to ecology, ethnobiology; archaeological interpretation; Plateau cultures

Methodology: Interviews, participation, field and library research

Context: scientific/academic and indigenous thought patterns

Specific Nez Perce plants discussed in this reference (45 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilíix**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Calochortus* spp.**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Celtis reticulata Torrey

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

Chrysothamnus nauseosus (Pallas) Britton

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins,

especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Cirsium scariosum* Nuttall**

Nez Perce name: **títux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tips; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Frasera fastigiata* (Pursh) Heller**

Nez Perce name:

Plant family: Gentianaceae

English name: clustered frasera

Description: Tall succulent herbaceous perennial with whorled leaves, a dense spike of blue flowers with four petals.

Habitat: Moist meadows and moist open forests, lowlands to moderate elevations; Blue Mountains of Oregon and Washington, central and northeast Idaho.

Plant parts used: roots, stems, and leaves

Use category: Food

Specific uses: Food: supplementary fresh vegetable.

Special preparation: Food: roots were dug in summer and boiled or baked, sometimes overnight in pit oven (they contain inulin). Stems and leaves were gathered in June-July and eaten fresh.

Other plants used in similar ways: Food: *Cirsium scariosum*.

Comments: In Nez Perce country this plant occurred on plateau wet prairie meadows but most of the habitat was lost to farming.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Larix occidentalis* Nuttall**

Nez Perce name: kimíle

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root

poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: **cí ci ta**

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine

(mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes aureum* Pursh**

Nez Perce name: kái

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa gymnocarpa Nuttall

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rosa nutkana Presl

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch

infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorus.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátocx**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium globulare Rydberg

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

Vaccinium membranaceum Douglas ex Torrey

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Vaccinium scoparium Leiberg

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: yé ye

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Marshall, A. G. 1999. Unusual Gardens: The Nez Perce and Wild Horticulture on the Eastern Columbia Plateau. Pp. 173-187 in D.D. Goble and P.W. Hirt (eds.). Northwest Lands, Northwest Peoples: Readings in Environmental History. University of Washington Press, Seattle.

Summary: An anthropological stereotype of Columbia Plateau cultures is that they did not actively cultivate plants. Marshall's close familiarity with Nez Perce culture has led him to conclude that Nez Perce people did deliberately use methods that encouraged growth of important plants. Examples of Nez Perce vegetation management practices include digging in such a way that soil is aerated, replanting roots, scattering seeds, and burning.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: This chapter presents an interesting interpretation of Nez Perce land management practices that favored plants important to them.

Implications for future management of Nez Perce National Historical Park lands: Marshall's discussion suggests certain methods of vegetation management that could be reinstated in specific areas. Prescribed burning is an example.

About the author: Marshall, Alan G.

Author category: Ethnoecology, ethnobiology, ethnography, cultural anthropology

Background: Faculty, Lewis & Clark State College, Lewiston, ID; working with Nez Perce on legal issues. Ph.D. Washington State University, Pullman 1977; B.A. 1967, University of Minnesota

Special interests: Nez Perce social structure as related to ecology, ethnobiology; archaeological interpretation; Plateau cultures

Methodology: Interviews, participation, field and library research

Context: scientific/academic and indigenous thought patterns

Specific Nez Perce plants discussed in this reference (4 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).
Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Martin, P. S., and C. R. Szuter. 1999. War zones and game sinks in Lewis and Clark's West. *Conservation Biology* 13(1): 36-45.

Summary: Martin proposes an explanation for the scarcity of large animals noted by the Corps of Discovery in the Bitterroots and the Columbia Plateau. He attributes vast reduction in large-animal populations to human predation and points out the abundance of these animals in traditionally uninhabited areas such as war zones. The paper mentions the importance of root foods in the native diet of the Columbia Plateau people.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The focus of the paper is on food animals, but it proposes an interesting explanation for the predominance of plant foods in the Nez Perce diet and (though the paper does not discuss this) a possible contributing factor for the change to semisedentism and food storage that occurred in the Columbia Plateau about 4500 years ago.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Martin, Paul S.

Author category: Zooarchaeology

Background: The Desert Laboratory, Department of Geosciences, University of Arizona

Special interests: Pleistocene environments, megafauna; Lewis and Clark expedition

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Perideridia gairdneri (Hooker & Arnott) Mathias

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

Matson, G. A., A. Ravve, J. M. Sugihara, and W. J. Burke. 1949. Antibiotic studies on an extract from *Leptotaenia multifida*. Journal of Clinical Investigations 28: 903-908.

Summary: Because fernleaf lomatium has been used medicinally by many indigenous groups, the authors of this paper studied oil extracted from roots of this plant. The oil is antibiologically active against many bacteria including some that cause tuberculosis, pneumonia and serious skin infections. The antibacterial activity of the oil is roughly comparable to that of Penicillin G and showed no toxic effects on mice when given subcutaneously in a purified form.

Methodology: Chemical and bacteriological analysis, library research

Significance to Nez Perce ethnobotany: This study documents the antibacterial activity of fernleaf lomatium, which was used medicinally by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Matson, G A.

Author category: Biochemistry

Background:

Special interests: Ethnobotany

Methodology: Chemical and bacteriological analysis, library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

McBeth, K. C. 1908. The Nez Perces Since Lewis and Clark. Fleming H. Revell Co. New York. 272 pp.

Summary: Kate McBeth joined her sister Sarah to teach in Lapwai in 1879, and this book is her reminiscences of their experiences. She sketches Nez Perce life at the time of Lewis and Clark, including First Roots and First Fruits feasts. She also mentions the incident of Nez Perce men being asked to eat kouse mush to indicate their acceptance of the decision of the Council of Chiefs to be friends with Lewis and Clark and those who sent the explorers, as well as not to go to war with other tribes. The Nez Perce women did not welcome this decision; they were afraid.

Methodology: Library research and report of personal experiences

Significance to Nez Perce ethnobotany: McBeth's book includes limited information on plant use.

Implications for future management of Nez Perce National Historical Park lands: McBeth mentions the importance of Weippe and Camas Prairies and the camas fields at Moscow.

About the author: McBeth, Kate C.

Author category: Missionary

Background:

Special interests: Nez Perce education

Methodology: Library research and report of personal experiences

Context: popular interest

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

McLeod, C. M. 1980. The Lolo Trail: a significant travel route across the Bitterroots. Archaeology in Montana 21(3): 117-128.

Summary: McLeod's paper describes a Lolo National Forest survey to locate the Lolo Trail and assess if any portions remain in "a natural state." This route across the Bitterroots is the traditional Nez Perce route to Montana and was also used by early explorers and settlers. McLeod includes a summary of the route and of the trail's use, and concludes that most of the trail can be located accurately.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: McLeod mentions "Indian-scarred" trees, and the two photographs (Figures 3 and 4) show trees with definite cambial peel scars.

Implications for future management of Nez Perce National Historical Park lands:

About the author: McLeod, C Milo.

Author category: US Forest Service

Background:

Special interests:

Methodology: Field and library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried

for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

McWhorter, L.V. 1952. Hear Me My Chiefs: Nez Perce Legend and History. The Caxton Printers, Ltd., Caldwell, ID. 640 pp.

Summary: Lucullus McWhorter had a close relationship with Nez Perce and Yakima people during the early 1900's. At the time of his death this book was unfinished, but it was completed by Ruth Bordin. Mentions of plant use are scattered through the book. On page 4 War Singer speaks of Nez Perce people coming to Clearwater or Kamiah every year to trade for camas and kouse. On page 15 McWhorter mentions an incident where a Snake warrior had encased his body in armor of smoothly polished mock-orange sticks; arrows did not penetrate this armor. Page 18 discusses the Corps of Discovery's use of five ponderosa pines given them by Chief Walammottinin to make dugout canoes. Other descriptions of plant use are on pages 20 (a mock-orange war club), 23 (Black Eagle and his wife choosing the center of a hawthorn thicket for a homesite), 40-41 (Two Moons hiding behind a rose thicket and escaping enemies), and the mention of U.S. military destruction of a huge kouse cache (p. 131). Between pp. 357 and 358 are photographs of the famed historical medicine tree in the Bitterroot Valley. The Nez Perces and the Flatheads both paid homage to this ponderosa pine.

Methodology: Oral history, personal experiences

Significance to Nez Perce ethnobotany: McWhorter's book is primarily a historical narrative but includes some information on important Nez Perce plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: McWhorter, Lucullus V.

Author category: Protagonist for Indian land and water rights; field historian

Background: Born in West Virginia, came West in 1903 to learn about Indians less influenced by Euroamerican culture than Eastern groups; settled in Yakima Valley and became good friends with the Yakama; met Yellow Wolf and other Nez Perces as they were on way to pick hops; became close friends and 'brothers.'

Special interests: Indian history and lore

Methodology: Discussions, visits to important sites, writing publications, exchange of gifts

Context: viewpoint of the Native Americans as communicated to McWhorter

Specific Nez Perce plants discussed in this reference (6 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

McWhorter, L.V. 1995 (1940). Yellow Wolf: His Own Story. The Caxton Printers, Ltd., Caldwell, ID. 328 pp.,

Summary: Yellow Wolf's narrative of the 1877 Nez Perce War is presented in this book, as told to his friend McWhorter. Yellow Wolf's reminiscences include mention of plants that were an everyday part of Nez Perce life. The book includes photographs of sites involved in the 1877 battles.

Methodology: Diligent recording of Yellow Wolf's stories, through an interpreter; and presentation of the great warrior's viewpoint, with explanation of certain names, expressions, and occurrences.

Significance to Nez Perce ethnobotany: Mentions of plants are incidental to the story but reveal the plants' importance in everyday Nez Perce life.

Implications for future management of Nez Perce National Historical Park lands: Yellow Wolf mentions several traditionally important camas and cous digging areas.

About the author: McWhorter, Lucullus V.

Author category: Protagonist for Indian land and water rights; field historian

Background: Born in West Virginia, came West in 1903 to learn about Indians less influenced by Euroamerican culture than Eastern groups; settled in Yakima Valley and became good friends with the Yakama; met Yellow Wolf and other Nez Percés as they were on way to pick hops; became close friends and 'brothers.'

Special interests: Indian history and lore

Methodology: Discussions, visits to important sites, writing publications, exchange of gifts

Context: viewpoint of the Native Americans as communicated to McWhorter

Specific Nez Perce plants discussed in this reference (9 total)

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles;

pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves);

tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice);

bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection

(boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern.

Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

Meehan, Thomas. 1898. The plants of Lewis and Clark's expedition across the continent, 1804-1806. Proceedings of the Academy of Natural Sciences of Philadelphia 12-49.

Summary: This paper discusses many of the plant collections made by the Corps of Discovery (primarily by Lewis) and quotes Lewis's original specimen label data. For some plants this label data includes information on use by indigenous peoples. The paper is based on Lewis's herbarium specimen label data.

Methodology: Herbarium research

Significance to Nez Perce ethnobotany: The paper includes 25 plants known to have been used by the Nez Percés, ten of these with Lewis's comments on Native use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Meehan, Thomas

Author category: Botany, Horticulture

Background: Established Meehan's Nurseries in Germantown, PA. Published gardening magazines. Gardener, Kew Gardens, England

Special interests: Floristics, ethnobotany

Methodology: Herbarium and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (10 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Calochortus elegans Pursh

Nez Perce name: ló las

Plant family: Liliaceae

English name: cat's-ear

Description: Small herbaceous perennial from a bulb, with one flat narrow basal leaf, flowers with three white petals usually with a purple crescent.

Habitat: Grassy slopes and open forests in the mountains; Northwest US and northern California.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer and boiled.

Other plants used in similar ways: Food: *Triteleia grandiflora*.

Comments: Bulbs are small and deep in the soil.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Meilleur, B. A., E. S. Hunn, and R. L. Cox. 1990. *Lomatium dissectum*: Multipurpose plant of the Pacific Northwest. *Journal of Ethnobiology* 10(1): 1-20.

Summary: Fernleaf lomatium (*Lomatium dissectum*) has been used as a root food, spring vegetable, human and horse medicine, and fish stupifier. This paper reviews the varied uses of this plant and reports results of chemical analysis of the roots. Table 1 outlines uses of this plant by various indigenous groups including the Nez Perces.

Methodology: Field and library research, chemical analysis

Significance to Nez Perce ethnobotany: The paper compares Nez Perce use of fernleaf lomatium with its use by other groups.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Meilleur, Brien A.

Author category: Botany

Background: Greenwall Ethnobotanical Garden, Bishop Museum, Captain Cook, HI; Center for Plant Conservation, Missouri Botanical Garden, St. Louis, MO; editor *Plants in Peril*

Special interests: Ethnobotany; conservation

Methodology: Field and library research, chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

Miles, B. 1975. Seasons, Months and Years and Calendar of the Nez Perce. Narrated by Angus Wilson. Videotape produced and narrated by Angus Wilson for Nez Perce National Historical Park. Washington State University, Pullman. 60 min.

Summary: In this tape Angus Wilson and Beatrice Miles discuss the Nez Perce calendar. They emphasize that names for the seasons and months originate from the natural environment and seasonal development of plants and animals as well as weather. They cite five or six months named in honor of plants.

Methodology: Interview, traditional knowledge

Significance to Nez Perce ethnobotany: The Nez Perce calendar is closely tied to the plant world, especially in the springtime and with relationship to root foods.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Miles, Beatrice

Author category: Nez Perce

Background:

Special interests: Maintaining Nez Perce traditions

Methodology: Oral traditions

Context: Popular interest

Specific Nez Perce plants discussed in this reference (3 total)

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (**qaws** = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Miles, D. J. ca. 1975. Early Nez Perce Trails. Videotape produced and narrated by Angus Wilson for Nez Perce National Historical Park. Washington State University. Pullman, WA. 60 min.

Summary: On this videotape Angus Wilson interviews Rev. Miles, discussing traditional Nez Perce trails in the Selway-Lochsa area and how they were used. Several different types of packsaddles are shown and Wilson mentions that cottonwood was used in saddle making.

Methodology: Interview

Significance to Nez Perce ethnobotany: Plants are not much discussed on this tape but dried plant foods were carried by Nez Perce travelers.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Miles, David J.

Author category: Nez Perce minister

Background:

Special interests: Nez Perce history

Methodology: Interview

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

Miller, J. 1998. Middle Columbia River Salishans. Pp. 253-270 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Middle Columbia Salishan groups are characterized in this chapter. Much of their use of plants is very similar to plant uses among Sahaptin cultures. Figure 2 is a nice series of photographs documenting stages in collecting and cooking black tree lichen.

Methodology: Library and museum research

Significance to Nez Perce ethnobotany: Most of the plants discussed here were also important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Miller, Jay

Author category: Anthropology

Background: Prince Rupert, British Columbia

Special interests: Salishan Columbia Plateau people

Methodology: Library and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (26 total)

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and

conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Mentha arvensis Linnaeus

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mítip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice. Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear

sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery

(twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Mills, J. E., and C. Osborne. 1952. Material culture of an Upper Coulee rockshelter. American Antiquity 17: 352-359.

Summary: In 1950 the first scientific excavations of a Columbia Plateau dry shelter were carried out. This paper summarizes materials recovered through these excavations, including cordage and wood artifacts. Most of the recovered cordage is of dogbane, but there were also numerous pieces made of western juniper bark and tules. Other cordage materials were sagebrush bark and alder bark. This is an interesting contrast to cordage found in lower Palouse River rockshelters, which was predominantly made of sedges.

Methodology: Excavation, laboratory analysis

Significance to Nez Perce ethnobotany: Plants used for cordage are largely dependent on local availability, which explains the large amount of western juniper cordage (apparently absent in Nez Perce culture).

Implications for future management of Nez Perce National Historical Park lands:

About the author: Mills, John E.

Author category: Archaeology

Background:

Special interests:

Methodology: Excavation, laboratory analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (14 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of

stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtitqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation.

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Typha latifolia Linnaeus

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Moerman, D. E. 1998. Native American Ethnobotany. Timber Press. Portland, OR. 927 pp.

Summary: This is an encyclopedia of culturally important plants in indigenous North America. The primary section (arranged alphabetically by plant genus) gives a brief summary of uses for each plant included and mentions selected indigenous groups known to use that plant. Following the plant catalog are an index of tribes, listing some of their culturally important plants and a common names index. In the introductory material Moerman presents interesting lists of plants with the greatest number of medicinal uses (p. 12), the greatest number of food uses (p. 15), the greatest number of fiber and coloring uses (both p. 17), and the greatest number of uses overall (Tables 1 and 2, pp. 11 and 12) (western redcedar is number one).

Methodology: Library research

Significance to Nez Perce ethnobotany: Moerman specifically mentions Nez Perce use of 19 plants but the book includes more than 150 plants known to have been used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Moerman, Daniel E.

Author category: Anthropology

Background: Associate Professor of Anthropology, Department of Behavioral Sciences, University of Michigan, Dearborn; Ph.D. University of Michigan 1974; M.A. 1965, A.B. 1963

Special interests: Medicinal plants, healing

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (196 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes,

sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Allium acuminatum* Hooker**

Nez Perce name:

Plant family: Liliaceae

English name: tapertip onion

Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.

Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed.

Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Allium geyeri* S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed.

Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Alnus rhombifolia* Nuttall**

Nez Perce name:

Plant family: Betulaceae

English name: white alder

Description: Tree up to 60 ft tall, bark silvery-white, leaves serrate, fruits small dry, wingless, in small cones.

Habitat: Along permanent streams at low to high elevations of inland Northwest US, California, British Columbia, Baja California.

Plant parts used: bark, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: stimulating circulation, treating tuberculosis or lymphatic ailments (bark decoction); skin inflammations (leaves). Spiritualism: stems for incense

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Apocynum androsemifolium Linnaeus

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, haffing and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, haffing, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses);

permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehthe?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arabis sparsiflora* Nuttall**

Nez Perce name:

Plant family: Brassicaceae

English name: sicklepod rockcress

Description: Herbaceous perennial or biennial with a taproot and a basal rosette of leaves with star-shaped hairs; leaves along the stem smaller. Flowers small, with four white, pink, or purple petals; fruit long and slender, podlike.

Habitat: Widespread in a variety of habitats but mostly sagebrush or ponderosa pine forest, lowlands to moderate elevations; interior western North America.

Plant parts used: roots, shoots

Use category: Medicine

Specific uses: Medicine: diarrhea, heartburn (roots chewed); contraceptive (plant); eyewash (whole plant infusion)

***Arctostaphylos nevadensis* A. Gray**

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: leaves, berries

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for

transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae English name: rock balsamroot
Description: Herbaceous perennial from a fleshy taproot, leaves in a basal rosette, deeply lobed, flowers in sunflower-like heads with golden yellow rays.
Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.
Plant parts used: root Use category: Food, Medicine
Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).
Special preparation: Food: the roots were pit roasted.
Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilíix**
Plant family: Asteraceae English name: hoary balsamroot
Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a basal rosette, lobed, flowers in sunflower-like heads with yellow rays.
Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.
Plant parts used: root Use category: Food
Specific uses: Food: A supplementary food, eaten raw or sometimes stored.
Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.
Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**
Plant family: Asteraceae English name: arrowleaf balsamroot
Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.
Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.
Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine
Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).
Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes
Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.
Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**
Plant family: Berberidaceae English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Ceanothus sanguineus Pursh

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia

Plant parts used: bark, wood, leaves

Use category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

Ceanothus velutinus Douglas var. velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

Celtis reticulata Torrey

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

Cercocarpus ledifolius Nuttall

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

Cercocarpus montanus Rafinesque var. glaber (S. Watson) Martin

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf mountain-mahogany

Description: Large shrub or small tree with gnarled growth form; leaves evergreen, broadest near the tip, shiny dark green above, pale beneath, margins toothed; flowers small, without petals, in axillary clusters; fruits small sharp achenes with plume-like persistent style.

Habitat: On rocky hilltops and ridges in dry steppe, canyons, and ridges; inland western North America from central Oregon south and east to the Rocky Mountains and central Mexico.

Plant parts used: wood

Use category: Technology, Medicine

Specific uses: Technology: wood/branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring. Medicine: respiratory problems (bark decoction).

Other plants used in similar ways: Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*

Chenopodium spp.

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: qémqem

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Cirsium scariosum* Nuttall**

Nez Perce name: títux

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.
Comments: Tender and sweet at all stages of growth.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Dipsacus sylvestris* Hudson**

Nez Perce name:

Plant family: Dipsacaceae

English name: teasel

Description: Tall prickly biennial from a taproot; leaves in pairs, with prickles along the underside; flowers small, pink or purple, in dense spiny cone-like clusters.

Habitat: Widespread European alien, in moist places.

Plant parts used: whole aboveground plant, seed heads

Use category: Technology, Medicine

Specific uses: Technology: seed heads for combing. Medicine: tonic (plant infusion).

Special preparation: Medicine: the flowering plant was dried and brewed into tea

***Eleocharis palustris* (Linnaeus) Roemer & Schultes**

Nez Perce name:

Plant family: Cyperaceae

English name: field spikerush

Description: Herbaceous perennial rhizomatous sedge without leaf blades, flowers in a narrow spike.

Habitat: Riparian and other marshy areas; widespread in temperate and cold-temperate Northern Hemisphere.

Plant parts used: stems

Use category: Technology

Specific uses: Technology: cordage, basketry, bedding/pillows, to sit on in sweathouse.

Special preparation: Technology: the stems were dried and soaked for cordage and baskets.

Other plants used in similar ways: Textiles: *Eleocharis rostellata*

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones

Use category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima* myrsinites); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweat-house as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Galium boreale* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: northern bedstraw

Description: Herbaceous perennial from rhizomes, stems square; leaves narrow, in whorls of four; flowers pale yellow, with four petals; fruits round, in pairs.

Habitat: Circumboreal, in wet places.

Plant parts used: roots, seeds

Use category: Food, Technology

Specific uses: Food: seeds. Technology: roots for red or yellow coloring agent.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Lithospermum rudemale*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.

Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Hesperostipa comata* (Trinius & Ruprecht) Barkworth**

Nez Perce name:

Plant family: Poaceae

English name: needle-and-thread

Description: Herbaceous perennial cespitose grass.

Habitat: Dry grasslands, shrub-steppe, low to high elevations; western and central North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: grass mats.

Special preparation: Technology: bundles of stems used with other grasses as warps in matting.

Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Elymus elymoides*.

Comments: Formerly called *Stipa comata*.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a *basal cluster*; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisiimseqe**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves Use category: Technology, Medicine
Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).
Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.
Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.
Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Iris missouriensis* Nuttall**

Nez Perce name:
Plant family: Iridaceae English name: wild blue iris
Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.
Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.
Plant parts used: rhizomes Use category: Medicine
Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Juniperus communis* Linnaeus**

Nez Perce name:
Plant family: Cupressaceae English name: common juniper
Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.
Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.
Plant parts used: cones Use category: Beverage, Medicine, Spiritualism
Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.
Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**
Plant family: Cupressaceae English name: Utah juniper
Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.
Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.
Plant parts used: foliage, cones Use category: Food, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins.

Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: **písq̄u**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Ligusticum grayi* Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: licorice-root

Description: Herbaceous perennial from a taproot, with fernlike leaves and small white flowers in an umbrella-shaped cluster.

Habitat: In more or less moist places, open or forested, at middle to high elevations in montane and interior Washington, Oregon, California, Idaho, and Nevada.

Plant parts used: root

Use category: Medicine

Specific uses: Medicine: cough, pneumonia, child's stomachache (root infusion or roots chewed); colds (root infusion, roots chewed, or used in sweat lodge); toothache (root piece placed in cavity)

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia

Plant parts used: root, fruits Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).
Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or

formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae English name: potato biscuitroot, "Indian-potato"
Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.
Plant parts used: tuberous root Use category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*.
Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: péqiy
Plant family: Apiaceae English name: nineleaf lomatium, "Indian celery"
Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.
Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.
Plant parts used: shoots, root, flowers, fruits Use category: Food, Medicine
Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk
Nutritional value: 7% protein.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.
Comments: Especially important source of vitamin C in spring.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:
Plant family: Caprifoliaceae English name: orange honeysuckle
Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.
Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.
Plant parts used: stems, fruits Use category: Food, Technology, Medicine, Confection
Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers). Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.
Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lonicera utahensis* Watson**

Nez Perce name:

Plant family: Caprifoliaceae

English name: red twinberry

Description: Small to tall shrub with rounded oval leaves in pairs; flowers in pairs, pale yellow to white, with a short spur at the base and a tube flaring out to five petals; fruits paired red berries joined at the base.

Habitat: Moist spots in the mountains of western North America.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits were eaten fresh and sometimes used for an emergency source of water

***Lupinus polyphyllus* Lindley**

Nez Perce name:

Plant family: Fabaceae

English name: largeleaf lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound, usually glabrous on upper surface, all attached to the stalk at its tip and radiating out like spokes; flowers blue or purple, pea-shaped, in long pyramid-shaped clusters.

Habitat: Moist to wet open or forested places at low to high elevations; western US and adjacent Canada.

Plant parts used: foliage

Use category: Medicine

Specific uses: Medicine: tonic (plant decoction).

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lupinus sericeus* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: silky lupine

Description: Silky-hairy herbaceous perennial from a taproot; leaves with five narrow palmately compound; flowers blue or purple. pea-shaped, in long dense pyramid-shaped clusters; fruits pods.

Habitat: Dry grasslands, sagebrush stands, or open forests; low to moderate elevations; interior western US and adjacent Canada.

Plant parts used: foliage

Use category: Technology, Medicine

Specific uses: Technology: bedding or floor covering in sweat lodge. Medicine: to stimulate urination.

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: temulté mul té mul

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Mertensia ciliata* (Torrey) G. Don**

Nez Perce name:

Plant family: Boraginaceae

English name: broadleaf bluebell

Description: Tall hairy herbaceous perennial with pointed oval leaves without stalks (except the lower leaves); flowers small, bell-shaped, blue, in clusters that are coiled when young; fruits four tiny nutlets.

Habitat: Moist to wet places in the mountains of the western US south of central Oregon and central Montana.

Plant parts used: plant

Use category: Medicine

Specific uses: Medicine: smallpox, measles, increasing mother's milk (plant infusion)

***Mimulus guttatus* DeCandolle**

Nez Perce name:

Plant family: Scrophulariaceae

English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often withered dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)

Nutritional value: 83 mg vitamin C per 100g

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelm**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.

Confection: root chewed

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils, deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth).

***Perideridia bolanderi* (A. Gray) A. Nelson & J.F. Macbride**

Nez Perce name:

Plant family: Apiaceae

English name: yampa

Description: Herbaceous perennial from a fleshy carrot-like taproot; leaves dissected, with long narrow segments, some of the terminal leaf segments very long; flowers small, white, in umbrella-shaped clusters.

Habitat: Moist places (sometimes on dry hillsides) in the foothills and high plains of interior western North America (not in Washington).

Plant parts used: roots

Use category: Food

Specific uses: Food: roots.

Other plants used in similar ways: Food: *Perideridia gairdneri*

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Phacelia heterophylla* Pursh**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: varileaf phacelia

Description: Tall densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy, often with two deep lobes at base; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Dry open places, usually sandy or rocky, various elevations; widespread in montane western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: tuberculosis (steam inhaled, plant infusion); colds, fever (steam inhaled); diarrhea, bowel hemorrhage, to facilitate childbirth (plant infusion)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Physocarpus malvaceus* (Greene) Kuntze**

Nez Perce name:

Plant family: Rosaceae

English name: ninebark

Description: Tall shrub with alternate three-five lobed maple-shaped leaves; flowers white, in dense round clusters; fruits clustered dry capsules.

Habitat: Moderate elevations; northern inland western US and southern Canada.

Plant parts used: stems

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots. Medicine: twigs for emetic. Spiritualism: washing hunting equipment, especially arrows, for protection from spells, charm to inflict bad luck on enemies.

Special preparation: Food: roots were steam cooked

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes

crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a *basal cluster*; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted.

The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Pterospora andromedea* Nuttall**

Nez Perce name:

Plant family: Ericaceae

English name: pinedrops

Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.

Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.

Plant parts used: whole plant

Use category: Technology, Medicine

Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.

Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**

Plant family: Ranunculaceae

English name: sagebrush buttercup

Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.

Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.

Plant parts used: whole plant, toxic

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice). Spiritualism: decoction as body wash or for purification in sweathouse

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtitqá**

Plant family: Anacardiaceae English name: poison-ivy
Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.
Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.
Plant parts used: toxic Use category: Contact causes skin irritation.
Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.
Comments: Many American Indians reportedly were not sensitive to poison-ivy.

Ribes aureum Pursh

Nez Perce name: **káí**
Plant family: Grossulariaceae English name: golden currant
Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.
Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.
Plant parts used: bark, fruits Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).
Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.
Other plants used in similar ways: Food: Rice

Ribes cereum Douglas

Nez Perce name: **kimmé**
Plant family: Grossulariaceae English name: wax currant
Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.
Habitat: Lowland shrub steppe to montane forests; inland western North America.
Plant parts used: inner bark, stems/leaves, fruits Use category: Food, Medicine
Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.
Special preparation: Food: fruits were picked in summer and eaten fresh.
Other plants used in similar ways: Food: *Ribes aureum*.
Comments: These fruits were not favored being somewhat dry and bland.

Ribes inerme Rydberg

Nez Perce name: **pí łus**
Plant family: Grossulariaceae English name: sour purple gooseberry; whitestem gooseberry
Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.
Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.
Plant parts used: roots, fruits Use category: Food, Beverage, Medicine
Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).
Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.
Other plants used in similar ways: *Ribes* spp

Ribes lacustre (Persoon) Poiret

Nez Perce name: **kimmé**

Plant family: Grossulariaceae English name: swamp black gooseberry
Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.
Habitat: Moist forests and streambanks in montane western and central North America.
Plant parts used: roots, bark, stems, berries Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)
Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.
Other plants used in similar ways: Food: *Ribes* spp

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **kimmé**
Plant family: Grossulariaceae English name: sweet red gooseberry; northern gooseberry
Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.
Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.
Plant parts used: fruits Use category: Food, Beverage, Medicine
Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).
Special preparation: Food: fruits were gathered in August and eaten fresh or dried.
Other plants used in similar ways: Food: *Ribes* spp

***Ribes viscosissimum* Pursh**

Nez Perce name:
Plant family: Grossulariaceae English name: sticky currant
Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.
Habitat: Wet or dry montane forests of inland western US and British Columbia.
Plant parts used: fruits Use category: Food
Specific uses: Food: fruits.
Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.
Other plants used in similar ways: Food: *Ribes* spp

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:
Plant family: Brassicaceae English name: watercress
Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.
Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.
Plant parts used: whole plants, leaves Use category: Food, Medicine
Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)
Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.
Comments: peppery taste; introduced plant.

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**
Plant family: Rosaceae English name: baldhip rose
Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."
Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta x tá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use category: Food

Specific uses: Food: young shoots for spring greens; fruits

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Rumex venosus* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter
Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: táxs

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: táxs

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry.

Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as soak)

***Salix scouleriana* Barratt**

Nez Perce name: táxs

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of

wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Salix sitchensis* Sanson**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Sitka willow

Description: Deciduous large dioecious shrub with velvety twigs and leaves; flowers and fruits in catkins, stamen one per flower.

Habitat: Moist to wet places at low to high elevations; Pacific western North America.

Plant parts used: inner bark

Use category: Food

Specific uses: Food: emergency food. Technology: firewood. Medicine: stomach ailments (branch infusion).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Sedum lanceolatum* Torrey var. *lanceolatum

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits upright follicles.

Habitat: Rocky or gravelly places, lowlands to high elevations; western and central North America.

Plant parts used: leaves

Use category: Water, Food, Medicine

Specific uses: Food: eaten when young. Beverage: emergency water source. Medicine: skin irritations, hemorrhoids (juice or poultice); childbirth recovery (stem/leaf/flower infusion); laxative (stem/leaf/flower infusion or fresh leaves chewed)

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).

Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.

Other plants used in similar ways: Food: *Shepherdia canadensis*.

Comments: Best taste when gathered after frost.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae English name: water-parsnip
Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.
Habitat: Low wet places, low to moderate elevations; North America.
Plant parts used: tuberous roots Use category: Food, Medicine
Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).
Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.
Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.
Other plants used in similar ways: Food: *Lomatium* spp.
Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:
Plant family: Liliaceae English name: false Solomon's seal
Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."
Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.
Plant parts used: roots, stems and leaves, berries Use category: Food, Medicine
Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh. Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent
Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:
Plant family: Liliaceae English name: stary Solomon's seal
Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.
Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.
Plant parts used: stems and leaves Use category: Medicine
Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh. Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Solidago canadensis* Linnaeus**

Nez Perce name:
Plant family: Asteraceae English name: goldenrod
Description: Tall unbranched herbaceous perennial in clumps from rhizomes; leaves alternate, long and narrowly lance-shaped, margins sharply toothed and tips long pointed; flowers golden-yellow, in dense heads in branched clusters; fruits tiny, dry, with fluffy hairs.
Habitat: Moist places at low to high elevations; transcontinental North America.
Plant parts used: leaves, seeds Use category: Food, Medicine, Toys
Specific uses: Food: leaves for cooked greens; seeds to thicken soups. Beverage: dried flowers for tea. Technology: toy whips. Medicine: respiratory problems, diuretic, or applied externally to stop bleeding (leaf infusion); influenza, diarrhea (flower infusion/decoction); sleeplessness,

diarrhea, or excessive crying in babies (bathing in shoot decoction); fever in children (shoot infusion).

Special preparation: Medicine: leaves were dried and powdered.

Comments: Some people are allergic to goldenrod pollen.

***Spiraea betulifolia* Pallas**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf spiraea

Description: Tall shrub with ovate leaves; flowers white or cream-colored, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Woods or open hillsides, wet or dry, from sea level to high elevations; inland northern and central US and adjacent Canada east to Saskatchewan, South Dakota, and Wyoming.

Plant parts used: leaves

Use category: Beverage, Medicine

Specific uses: Beverage: leaves for tea. Medicine: stomach ailments (leaf infusion, whole plant infusion, or root/leaf decoction); inflammation, fever, colds (leaf infusion); colds, poor kidneys, ruptures, pain relief (e.g. menstrual pain, abdominal pain) (branch infusion); diarrhea (root/leaf decoction); venereal disease (leaf infusion or leaf/branch decoction)

***Spiraea densiflora* Nuttall**

Nez Perce name:

Plant family: Rosaceae

English name: subalpine spiraea

Description: Small to medium shrub with ovate leaves; flowers purple or pink, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Moist places in the mountains, sometimes on open rocky slopes, from 2000 to 11,000 feet; Northwest U.S., California, and British Columbia.

Plant parts used: leaves

Use category: Beverage, Medicine

Specific uses: Beverage: leaves for tea

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Streptopus roseus* Michaux**

Nez Perce name:

Plant family: Liliaceae

English name: twisted-stalk

Description: Herbaceous perennial from rhizomes; leaves ovate, parallel-veined, shiny, bases clasping the stem; flowers white, yellowish, or rose, sometimes streaked or spotted; fruits red berries.

Habitat: Streambanks, moist woods, usually above 3000 ft. elevations; western boreal North America.

Plant parts used: fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not a favorite food. Medicine: tonic, stomach ailments (plant infusion); internal pains (rhizome decoction). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trifolium pratense* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: red clover

Description: Herbaceous perennial from a taproot; leaves with three leaflets; flowers pink to purple, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread at low to high elevations.

Plant parts used: flower heads

Use category: Medicine

Specific uses: Food: flower heads eaten raw or cooked. Medicine: treating stomach cancer (flower head infusion)

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Triteleia grandiflora* Lindley**

Nez Perce name: cátoxc

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms Use category: Food, Spiritualism
Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.
Special preparation: Food: corms were dug in April and baked or boiled.
Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.
Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply.
Formerly called *Brodiaea douglasii*.

***Typha angustifolia* Linnaeus**

Nez Perce name: **tóko**
Plant family: Typhaceae English name: narrowleaf cattail
Description: Tall narrow herbaceous perennial from thick rhizomes; leaves long, thick, grasslike; flowers very small, in dense spikes, female portion below male portion of spike on same stalk, with a section of bare stalk between them; seeds tiny, with fluffy hairs.
Habitat: In shallow quiet water at a variety of elevations; eastern and central US and central California; introduced in the Northwest US.
Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff Use category: Food, Technology, Medicine
Specific uses: Food: rhizomes, young shoots, young flower spikes eaten fresh or cooked; pollen used in flour. Technology: leaves for matting, cordage, basketry; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses, diapers. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds (seed fluff).
Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.
Other plants used in similar ways: Matting: *Typha latifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.
Comments: Air spaces in leaves provide insulation, buoyancy.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**
Plant family: Typhaceae English name: common cattail
Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.
Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.
Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff Use category: Food, Technology, Medicine
Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour. Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).
Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split
Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.
Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.
Comments: Air spaces in leaves provide insulation, buoyancy.

***Typha X glauca* Gordon**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: hybrid cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below male portion on same stalk, with or without a section of bare stalk between the male and female portions; seeds tiny, with fluffy hairs.

Habitat: Quiet shallow water at low to moderate elevations; in sparsely scattered locations. A hybrid.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes were eaten fresh or cooked; pollen was used in flour. Technology: leaves for matting, basketry, cordage, bindings, sandal ties; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses, diapers. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha latifolia*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: ku ye

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Vicia americana* Muhlenberg var. *truncata* (Nuttall) Brewer**

Nez Perce name:

Plant family: Fabaceae

English name: American vetch

Description: Trailing herbaceous perennial with pinnately-compound leaves with tendrils at the tips, purple flowers in loose long-stalked heads; fruits small pods.

Habitat: Meadows and similar habitats in lowlands to moderate elevations; North America from Alaska and the Pacific Coast south to Mexico, east to Ontario, West Virginia, and Missouri.

Plant parts used: foliage, seeds

Use category: Food, Spiritualism

Specific uses: Food: young foliage sometimes eaten cooked. Spiritualism: plant infusion as bathing solution in the sweathouse.

Special preparation: Food: foliage was boiled or baked

***Viola* spp.**

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: yé ye

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Moore, M., and M. Kamp. 1995. Medicinal Plants of the Pacific West. Red Crane Books. Santa Fe, NM. 359 pp.

Summary: Moore and Kamp have assembled an encyclopedia of western North American medicinal plants illustrated with a line drawing and distribution map for each plant. There is information on the plants description, habitat, and medicinal uses, as well as the medicinally active chemical constituents. A section of color photographs is between pages 24 and 25. The book is directed toward practitioners of herbalism but contains value information on medicinal plants and details on how they affect humans.

Methodology: Library research, experimentation, interviews

Significance to Nez Perce ethnobotany: Moore's book does not directly mention indigenous plant use but is a valuable source of information on what chemicals give a plant its medicinal value and how these chemicals affect the human body.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Moore, Michael

Author category: Herbalism

Background: Director, Southwest School of Botanical Medicine, Bisbee, AZ

Special interests: Healing with plants

Methodology: Library research, experimentation, interviews

Context: popular interest

Specific Nez Perce plants discussed in this reference (84 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern.

Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

Agastache urticifolia (Bentham) Kuntze var. urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

Alnus incana (Linnaeus) Moench

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

Alnus rhombifolia Nuttall

Nez Perce name:

Plant family: Betulaceae

English name: white alder

Description: Tree up to 60 ft tall, bark silvery-white, leaves serrate, fruits small dry, wingless, in small cones.

Habitat: Along permanent streams at low to high elevations of inland Northwest US, California, British Columbia, Baja California.

Plant parts used: bark, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: stimulating circulation, treating tuberculosis or lymphatic ailments (bark decoction); skin inflammations (leaves). Spiritualism: stems for incense

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Apocynum androseifolium Linnaeus

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as

protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiaet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorous

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Dipsacus sylvestris* Hudson**

Nez Perce name:

Plant family: Dipsacaceae

English name: teasel

Description: Tall prickly biennial from a taproot; leaves in pairs, with prickles along the underside; flowers small, pink or purple, in dense spiny cone-like clusters.

Habitat: Widespread European alien, in moist places.

Plant parts used: whole aboveground plant, seed heads

Use category: Technology, Medicine

Specific uses: Technology: seed heads for combing. Medicine: tonic (plant infusion).

Special preparation: Medicine: the flowering plant was dried and brewed into tea

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones

Use category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima myrsinites*); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Galium boreale* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: northern bedstraw

Description: Herbaceous perennial from rhizomes, stems square; leaves narrow, in whorls of four; flowers pale yellow, with four petals; fruits round, in pairs.

Habitat: Circumboreal, in wet places.

Plant parts used: roots, seeds

Use category: Food, Technology

Specific uses: Food: seeds. Technology: roots for red or yellow coloring agent.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Lithospermum rudérale*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked. Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Perces but available along the Snake River.

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a basal rosette of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Heraclium lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parship

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing

(root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Ligusticum grayi* Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: licorice-root

Description: Herbaceous perennial from a taproot, with fernlike leaves and small white flowers in an umbrella-shaped cluster.

Habitat: In more or less moist places, open or forested, at middle to high elevations in montane and interior Washington, Oregon, California, Idaho, and Nevada.

Plant parts used: root

Use category: Medicine

Specific uses: Medicine: cough, pneumonia, child's stomachache (root infusion or roots chewed); colds (root infusion, roots chewed, or used in sweat lodge); toothache (root piece placed in cavity)

***Ligusticum verticillatum* (Geyer) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: rose licorice-root

Description: Fern-like herbaceous perennial from a taproot; flowers white, in umbrella-shaped clusters; fruits in pairs, ribbed.

Habitat: Moist woods to swampy areas in foothills and valleys in northern Idaho and western Montana.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: colds, sore throat (root smoked); fever (root infusion)

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **tiítalam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis

(poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)

Nutritional value: 83 mg vitamin C per 100g

***Nuphar polysepalum* Engelm**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix. Confection: root chewed

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils, deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth).

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine:

stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qáppaq

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken

bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Potentilla gracilis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: slender cinquefoil

Description: Herbaceous perennial with hairy palmately-compound leaves with round-toothed margins; flowers yellow, with five petals, buttercup-like; fruits dry, in a dense cluster, resembling tiny beans.

Habitat: Moist meadows and open forests, lowlands to high elevations; western North America.

Plant parts used: roots, leaves

Use category: Medicine

Specific uses: Medicine: blood tonic, diarrhea, aches/pains, gonorrhea, washing sores (root infusion); wounds (mashed leaf/root poultice with subalpine fir pitch).

Special preparation: Medicine: roots and leaves were dried and then brewed into tea

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus nivalis* Douglas ex Hooker**

Nez Perce name: **cicmúxcicmux**

Plant family: Rosaceae

English name: snow dewberry

Description: Prickly bramble vine with evergreen prickly compound leaves (leaflets often lobed); flowers pink to purple or white, with five petals; fruits red.

Habitat: Moist, open to shaded mountain slopes; British Columbia to southwest Oregon and east to Idaho.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: fruits were eaten fresh, or in productive years they were dried for winter.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry

baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tragopogon dubius* Scopoli**

Nez Perce name:

Plant family: Asteraceae

English name: goatsbeard, oyster plant

Description: Biennial from a fleshy taproot, with milky sap and long pointed grass-like leaves; flowers yellow, in a dense head; fruits dry, with a long-stalked feathery plum on top.

Habitat: Introduced from Eurasia; weedy in wet to dry habitats at low to high elevations.

Plant parts used: root, seed fluff

Use category: Food, Technology, Confection

Specific uses: Food: roots. Technology: seed fluff to stuff pillows. Confection: milky sap chewed.

Special preparation: Confection: for chewing, stems were broken off at the base. The milky sap was allowed to dry and rolled into a ball

Nutritional value: Roots 2.9% protein, 0.6% fat, 18% carbohydrates. Per 100 g: 11 mg vitamin C, 47 mg calcium, 1.5 mg iron, 380 mg potassium, 66 mg phosphorous.

Comments: Roots are rather bitter and probably not a favored food.

***Trifolium pratense* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: red clover

Description: Herbaceous perennial from a taproot; leaves with three leaflets; flowers pink to purple, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread at low to high elevations.

Plant parts used: flower heads

Use category: Medicine

Specific uses: Food: flower heads eaten raw or cooked. Medicine: treating stomach cancer (flower head infusion)

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Percés preferred to collect these berries in the subalpine fir zone.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorus.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Viola* spp.**

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

Morgan, G. R. 1981. "Sugar bowls" (*Clematis hirsutissima*): a horse restorative of the Nez Perces. *Journal of Ethnopharmacology* 4: 117-120.

Summary: Native Americans used a variety of plants as horse medicines. Morgan's paper discusses "sugar bowls," a plant used by Nez Perce people as "smelling salts" for reviving exhausted horses. Morgan also mentions other medicinal uses of "sugar-bowls" by various Native groups and discusses other plants used as horse stimulants by various groups.

Methodology: Literature review

Significance to Nez Perce ethnobotany: The paper is based on reports by early botanists (Geyer, 1846; Hooker, 1847) who observed Nez Perce plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Morgan, George R.

Author category: Botany, Geography

Background: Geography Dept., Chadron State College, Nebraska; Botanical Museum, Harvard University. Ph.D. University of Washington

Special interests: Medical ethnobotany

Methodology: Literature review

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

Morris, V. ca. 1975. Edible Roots and Cultural Relations, Produced and Narrated by Angus Wilson. Videotape produced and narrated by Angus Wilson for Nez Perce National Historical Park. Washington State University, Pullman. 60 min.

Summary: This videotape is a very interesting discussion of important Nez Perce root foods and their preparation. Camas, two kinds of kouse, yampa, and bitterroot are shown whole and in prepared form. Black tree lichen is also included, as well as the medicinal root lovage.

Methodology: Interview

Significance to Nez Perce ethnobotany: This tape presents an excellent summary of the importance of major Nez Perce root foods.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Morris, Viola.

Author category: Nez Perce

Background:

Special interests: Nez Perce traditions

Methodology: Oral traditions, experience

Context: popular interest

Specific Nez Perce plants discussed in this reference (11 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with

other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots

eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in men's sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqá t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: coues was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes coues was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and

for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in 'ears' with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Moulton, G. E. 1999. Herbarium of the Lewis & Clark Expedition. The Journals of the Lewis & Clark Expedition 12: 352 pp. University of Nebraska Press, Lincoln.

Summary: This volume of the Lewis & Clark series discusses the plants collected by Lewis & Clark and described in their journals. The bulk of the book consists of photographs of all existing Lewis & Clark specimens, including their original labels. Some of the labels include notes about Indian use of the plant. For example, the *Lomatium cous* specimen label includes this information: "An umbelliferous plant of the root of which the Wallawallaws make a kind of bread." Appendix A is a catalog list of Lewis and Clark's botanical specimens, and Appendix B lists these specimens chronologically. Appendix C is photographs of the unpublished illustrations of Lewis's plants (drawn by botanist Frederic Pursh).

Methodology: Museum and library research

Significance to Nez Perce ethnobotany: This book is very important as it documents the actual plant specimens collected by Lewis and Clark and their notes on plant use at a time when Columbia Plateau cultures were little contaminated by European influence. Many of these plants were important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Moulton, Gary E.

Author category: History

Background: Associate Professor of American History, University of Nebraska, Lincoln. Ph.D. Oklahoma State University 1973, M.A. 1970; B.A. Northeast Oklahoma State University 1968

Special interests: American Indian and Western history

Methodology: Museum and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (63 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect

bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Calochortus elegans* Pursh**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: cat's-ear

Description: Small herbaceous perennial from a bulb, with one flat narrow basal leaf, flowers with three white petals usually with a purple crescent.

Habitat: Grassy slopes and open forests in the mountains; Northwest US and northern California.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer and boiled.

Other plants used in similar ways: Food: *Triteleia grandiflora*.

Comments: Bulbs are small and deep in the soil.

***Calypso bulbosa* (Linnaeus) Oakes**

Nez Perce name:

Plant family: Orchidaceae

English name: fairy slipper

Description: Herbaceous perennial from a bulb, with one succulent oval leaf and pink orchid flower with purple spots on the lip.

Habitat: Cool moist forests from the lowlands to moderate elevations in the mountains; western North America.

Plant parts used: flowers

Use category: Spiritualism

Specific uses: Spiritualism: Charm

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ceanothus sanguineus* Pursh**

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia

Plant parts used: bark, wood, leaves

Use category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis hirsutissima* Pursh**

Nez Perce name:

Plant family: Ranunculaceae

English name: sugar bowls

Description: Herbaceous perennial, leaves finely divided, flowers bell-shaped, pendant, rich purple inside, hairy on the outside; fruits with a long feathery plume.

Habitat: Moist open areas of grassland, steppe, and ponderosa pine; lowlands of inland Northwest US and adjacent Canada.

Plant parts used: roots, foliage

Use category: Medicine, Medicine

Specific uses: Medicine: headache (foliage); horse restorative (root).

Special preparation: Horse medicine: the roots were dug in spring, the skin scraped off, and a piece of root was placed in or held up to horse's nostrils.

Other plants used in similar ways: Horse Medicine: *Lomatium dissectum* var. *multifidum*

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorous

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Eriophyllum lanatum* (Pursh) Forbes**

Nez Perce name: **qayqayat**

Plant family: Asteraceae

English name: Oregon sunshine, woolly sunflower

Description: Small softly hairy grayish herbaceous perennial with toothed to deeply lobed leaves; flowers in heads with bright yellow rays.

Habitat: Rocky slopes, shallow soils, talus, and other dry areas, lowlands to mid elevations; inland montane western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: leaves rubbed on salmon hooks and lines to obscure them.

Special preparation: Technology: the leaves were soaked and rubbed on

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Frasera fastigiata* (Pursh) Heller**

Nez Perce name:

Plant family: Gentianaceae

English name: clustered frasera

Description: Tall succulent herbaceous perennial with whorled leaves, a dense spike of blue flowers with four petals.

Habitat: Moist meadows and moist open forests, lowlands to moderate elevations; Blue Mountains of Oregon and Washington, central and northeast Idaho.

Plant parts used: roots, stems, and leaves

Use category: Food

Specific uses: Food: supplementary fresh vegetable.

Special preparation: Food: roots were dug in summer and boiled or baked, sometimes overnight in pit oven (they contain inulin). Stems and leaves were gathered in June-July and eaten fresh.

Other plants used in similar ways: Food: *Cirsium scariosum*.

Comments: In Nez Perce country this plant occurred on plateau wet prairie meadows but most of the habitat was lost to farming.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath); body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Hesperostipa comata* (Trinius & Ruprecht) Barkworth**

Nez Perce name:

Plant family: Poaceae

English name: needle-and-thread

Description: Herbaceous perennial caespitose grass.

Habitat: Dry grasslands, shrub-steppe, low to high elevations; western and central North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: grass mats.

Special preparation: Technology: bundles of stems used with other grasses as warps in matting.

Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Elymus elymoides*.

Comments: Formerly called *Stipa comata*.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp., *Symphoricarpos albus*

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or

formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae English name: nineleaf lomatium, "Indian celery"
Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.
Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.
Plant parts used: shoots, root, flowers, fruits Use category: Food, Medicine
Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk
Nutritional value: 7% protein.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.
Comments: Especially important source of vitamin C in spring.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:
Plant family: Caprifoliaceae English name: orange honeysuckle
Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.
Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.
Plant parts used: stems, fruits Use category: Food, Technology, Medicine, Confection
Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers). Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.
Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:
Plant family: Caprifoliaceae English name: black twinberry
Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.
Habitat: Moist to wet spots at low to high elevations in western North America.
Plant parts used: bark, stems/leaves, fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).
Special preparation: Food: fruits were dried and stored for winter use

***Mimulus guttatus* DeCandolle**

Nez Perce name:
Plant family: Scrophulariaceae English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often withered dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Penstemon wilcoxii* Rydberg**

Nez Perce name: **kitímkitim**

Plant family: Scrophulariaceae

English name: penstemon

Description: Herbaceous perennial with long-ovate leaves in pairs, leathery; flowers blue-purple.

Habitat: Open places, slopes, banks, and forests, montane foothills to moderate elevations; northern and central Idaho, northeast Oregon, northwest Montana.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: sores (root chewed, root poultice, or root infusion externally)

***Phacelia heterophylla* Pursh**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: varileaf phacelia

Description: Tall densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy, often with two deep lobes at base; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Dry open places, usually sandy or rocky, various elevations; widespread in montane western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: tuberculosis (steam inhaled, plant infusion); colds, fever (steam inhaled); diarrhea, bowel hemorrhage, to facilitate childbirth (plant infusion)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a *basal cluster*; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes

pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds Use category: Technology, Medicine
Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes viscosissimum* Pursh**

Nez Perce name:

Plant family: Grossulariaceae

English name: sticky currant

Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.

Habitat: Wet or dry montane forests of inland western US and British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.

Other plants used in similar ways: Food: *Ribes* spp

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta x'tá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to

prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sarcobatus vermiculatus* (Hooker) Torrey**

Nez Perce name:

Plant family: Chenopodiaceae

English name: greasewood

Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.

Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.

Plant parts used: spines, stems or bark, young shoots

Use category: Food, Technology

Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).

Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.

Other plants used in similar ways: Food: *Shepherdia canadensis*.

Comments: Best taste when gathered after frost.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Trifolium macrocephalum* (Pursh) Poiret**

Nez Perce name:

Plant family: Fabaceae

English name: largeheaded clover

Description: Herbaceous perennial, leaves with five leaflets; one-one 1/4 inch pink or white flowers in large dense heads; fruits short pods.

Habitat: Dry shallow, rocky or sandy soils, often on exposed ridgetops, low to high elevations; east of the Cascade Mountains from central Washington to western Idaho and south to California and Nevada.

Plant parts used: flower heads

Use category: Food

Specific uses: Food: flower heads eaten raw or cooked.

Special preparation: Beverage: the flower heads were brewed for tea.

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Triteleia grandiflora* Lindley**

Nez Perce name: cátoxc

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply.
Formerly called *Brodiaea douglasii*.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed.

Murphey, E.V. 1990. Indian Uses of Native Plants (Third Printing). Meyerbooks, Publisher, Glenwood, IL. 81 pp.

Summary: This book, published by the Mendocino County Historical Society, summarizes indigenous use and preparation of selected plants. It arranges the plants by Use category (e.g. basketry, foods, medicine) and then by indigenous group. There is a dictionary of plant names (English, indigenous, and Latin) in alphabetical order of the English name. Nez Perce cornhusk bags are discussed on page 10, dwelling styles on pp. 58-59. There are some mistakes in the book (e.g. *Apium* is given as the Latin name for wild celery, when it is actually the genus for cultivated celery; *Cascara sagrada* is given as the Latin name for cascara when it is actually the common name). A few of the Latin names are misspelled

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Murphey discusses plants used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Morgan, George R.

Author category: Botany, Geography

Background: Geography Dept., Chadron State College, Nebraska; Botanical Museum, Harvard University. Ph.D. University of Washington

Special interests: Medical ethnobotany

Methodology: Literature review

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (68 total)

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland

Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorus. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorus.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for

transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect

bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perce preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex vesicaria* Linnaeus var. *vesicaria

Nez Perce name:

Plant family: Cyperaceae

English name: inflated sedge

Description: Herbaceous perennial, clustered from rather short rhizomes; stems triangular, leaves in three rows; male flowers in narrow terminal spike, female flowers in lateral more or less sessile spikes; fruits (perigynia) glabrous, ribbed, with a long beak.

Habitat: Wet places, usually in standing water, lowlands to mountains; circumboreal and south to California, New Mexico, Missouri, and Delaware.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: Cordage, matting.

Special preparation: Technology: stems/leaves were dried and then soaked.

Other plants used in similar ways: Cordage: *Carex pellita*

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp

problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture.
Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked. Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Perces but available along the Snake River.

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a *basal cluster*; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance

shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat

lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage

or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root

decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root

infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets,

basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments,

swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing

skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate

appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.
Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Lomatium dissectum (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix.
Confection: root chewed

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth

recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring.

Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pterospora andromedea* Nuttall**

Nez Perce name:

Plant family: Ericaceae

English name: pinedrops

Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.

Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.

Plant parts used: whole plant

Use category: Technology, Medicine

Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.

Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Ribes cereum Douglas

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Rosa nutkana Presl

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streambanks, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: stary Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).

Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply.

Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae English name: huckleberries, blueberries
Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.
Habitat: Montane.
Plant parts used: fruits Use category: Food, Beverage
Specific uses: Food: fruits.
Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.
Nutritional value: Fruits 7-16% mg vitamin C.
Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**
Plant family: Valerianaceae English name: tobaccoroot, valerian
Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.
Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.
Plant parts used: root, leaves Use category: Food, Medicine
Specific uses: Food: roots an occasional food. Medicine: sedative (roots).
Special preparation: Food: long slow cooking detoxifies the roots.
Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum* spp.**

Nez Perce name:
Plant family: Liliaceae English name: false hellebore, corn-lily
Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.
Habitat: Wet places; North America.
Plant parts used: toxic Use category: Medicine
Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**
Plant family: Liliaceae English name: beargrass
Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.
Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.
Plant parts used: leaves Use category: Technology
Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.
Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).
Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:
Plant family: Poaceae English name: corn
Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.
Habitat: Cultivated
Plant parts used: inner husks Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Newberry, J. S. 1887. Food and fiber plants of the North American Indians. Popular Science Monthly 32: 31-46.

Summary: This is one of the early papers on western North American Indian ethnobotany. Since the paper is based on Newberry's notes taken during his visits to Indian tribes in the West about 1860. It includes a brief discussion of the uses of each plant mentioned.

Methodology: Field research

Significance to Nez Perce ethnobotany: Newberry mentions the Camas Prairie and discusses 19 plants used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Newberry, J S.

Author category: Medicine

Background:

Special interests: Ethnobotany

Methodology: Field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (18 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups. Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: **tá ko**

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Norton, H. H., R. Boyd, and E. S. Hunn. 1983. The Klickitat Trail of south-central Washington: A reconstruction of seasonally used subsistence sites. Pp. 121-152 In Greengo, R. (ed.), Prehistoric Places on the Southern Northwest Coast. Thomas Burke Memorial-Washington State Museum, Seattle, WA.

Summary: The Klickitat people followed a typical western Columbia Plateau way of life. During midsummer they traveled to middle elevations in the Cascade Mountains to dig camas and collect fruits, and in late summer they traveled to higher elevations to pick huckleberries. This paper documents the Klickitat Trail, which crosses the Cascades to the Vancouver area and discusses its importance in Klickitat settlement and subsistence.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: With a few exceptions such as acorns and hazelnuts, the plants important to the Klickitat people were also important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Norton, Helen H.

Author category: Ethnobiology

Background: Ph.D. University of Washington 1985

Special interests: Indigenous foods, seasonal activities

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (19 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled

rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups. Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage)

decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to

prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Norton, H. H., E. S. Hunn, C. S. Martinsen, and P. B. Keely. 1984. Vegetable food products of the foraging economies of the Pacific Northwest. Ecology of Food and Nutrition 14: 219-228.

Summary: Nutritional analysis of 27 indigenous Northwest food plants revealed important sources of calcium, magnesium, iron, zinc, vitamin C, and carbohydrates. Tables 1, 2, and 3 summarize nutritional content of fruits, root foods, and sprouts, respectively.

Methodology: Field and library research, chemical analysis

Significance to Nez Perce ethnobotany: The study includes 22 plants known to be food sources for the Nez Perce.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Norton, Helen H.

Author category: Ethnobiology

Background: Ph.D. University of Washington 1985

Special interests: Indigenous foods, seasonal activities

Methodology: Field and library research, chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (22 total)

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to L. cous but was scarce.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root Use category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.
Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**
Plant family: Apiaceae English name: yampa, Indian-carrot
Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.
Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.
Plant parts used: roots, seeds Use category: Food, Technology, Medicine
Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).
Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal
Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.
Other plants used in similar ways: Food: *Perideridia bolanderi*.
Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Ribes lacustre* (Persoon) Poiré**

Nez Perce name: **kimmé**
Plant family: Grossulariaceae English name: swamp black gooseberry
Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.
Habitat: Moist forests and streambanks in montane western and central North America.
Plant parts used: roots, bark, stems, berries Use category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)
Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.
Other plants used in similar ways: Food: *Ribes* spp

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae English name: currants and gooseberries
Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.
Habitat: Woods, riparian areas, washes, moist places, various elevations.
Plant parts used: fruits Use category: Food
Specific uses: Food: fruits
Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.
Comments: Ribes seeds are high in gamma-linoleic acid.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtlá x
Plant family: Rosaceae English name: thimbleberry
Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.
Habitat: Forests, open areas, lowlands to high elevations; western North America.
Plant parts used: young shoots, insect galls, leaves, fruits Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).
Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.
Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:
Plant family: Rosaceae English name: salmonberry
Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.
Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.
Plant parts used: young shoots, fruits Use category: Food
Specific uses: Food: young shoots for spring greens; fruits
Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: cimú xcimux cimú k
Plant family: Rosaceae English name: Pacific blackberry
Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé mítip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

Olsen, A. L. 1979. The Nez Perce Flute. Northwest Anthropological Research Notes 13(1): 36-44.

Summary: This paper discusses the flutes made by Nez Perce people and compares Nez Perce ideas regarding flutes and construction methods to those of other cultures. Olsen mentions that the generic name for elderberry, Sambucus, derives from Sambuke, the Greek name for a small flute.

Methodology: Museum, and library research

Significance to Nez Perce ethnobotany: Traditional Nez Perce flutes were most often made from elderberry.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Olsen, A Loran.

Author category: Music

Background: School of Music and Theater Arts, Washington State University, Pullman

Special interests: Preserving traditional American Indian music

Methodology: Museum, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

Packard, R. L. 1891. Notes on the mythology and religion of the Nez Perces. Journal of American Folk-Lore 4: 327-330.

Summary: During the winter of 1880-1881, Nez Perce interpreter James Reubens told R.L. Packard the two traditional stories described in this paper. The story of "How Beaver stole Fire from the Pines" is a lovely description of why certain woods are used for hearths and twirling-sticks to kindle fire, and why the course of the Grand Ronde River is so tortuous. It also explains the distribution of pine trees along the river.

Methodology: Interviews

Significance to Nez Perce ethnobotany: Some woods are better than others for starting fires, and a traditional Nez Perce story explains why.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Packard, R L.

Author category:

Background:

Special interests:

Methodology: Interviews

Context: academic

Specific Nez Perce plants discussed in this reference (4 total)

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for

twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Thuja plicata Donn ex D. Don

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry

(especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Palmer, E. 1871. Food products of the North American Indians. USDA Report of the Commission for 1870: 404-428.

Summary: Palmer's paper surveys plant use by American Indians during the mid-1800's. Like many papers written in the 1800's, Palmer's writings include judgmental wording such as Comments on the inexplicable (to him) preference of Indians for their native foods.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The paper includes 15 plants used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Palmer, Edward

Author category: Medicine

Background:

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (14 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Chenopodium spp.

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

Crataegus douglasii Lindley

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers). Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility

in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.
Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

Rhamnus purshiana DeCandolle

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rubus parviflorus Nuttall

Nez Perce name: **ta x'tá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Percés preferred to collect thimbleberries at higher elevations.

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Triticum aestivum* Linnaeus**

Nez Perce name: **peqes**

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: what was gleaned from the fields and boiled until the kernels opened

Palmer, G. B. 1998. Coeur d'Alene. Pp. 313-326 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: The environment, culture, and history of the Coeur d'Alene people are summarized in this chapter. On p. 316 there is a description of food storage methods, and pp. 319-320 describe the important Coeur d'Alene story of Chief Child of the Root. The Plant People were also important in Coeur d'Alene stories.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Although Coeur d'Alene subsistence differed somewhat from that of the Nez Percés because it centered around the large lake, many traditions were common between both cultures, including the importance of many plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Palmer, Gary B.

Author category: Anthropology

Background: Department of Anthropology and Ethnic Studies, University of Nevada, Las Vegas

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (21 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with

other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart

tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in

sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streambanks, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Palmer, G. B. 1999. Indian Pioneers: The Settlement of Ni'lukhwalqw (Upper Hangman Creek, Idaho) by the Snchitsu'umsh (Coeur d'Alene Indians). Draft revision of a paper presented to the 80th Annual Meeting of the American Anthropological Association, December 2-6, 1981. Los Angeles, CA. 21 pp.

Summary: During 1875-1877 the Coeur d'Alene people reluctantly decided that they had no choice but to move to the valley of Hangman Creek and become farmers. The pressure of white settlers coming via the Mullan Road was increasing, and the Jesuit missionaries warned the Coeur d'Alenes how much more extensive the white encroachment would become.

Methodology: Library research

Significance to Nez Perce ethnobotany: Two basic root foods of the Coeur d'Alene people are mentioned: camas and bitterroot.

Implications for future management of Nez Perce National Historical Park lands:

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Author category: Anthropology

Background: Department of Anthropology and Ethnic Studies, University of Nevada, Las Vegas

Special interests:

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Phinney, A. 1934. Nez Perce Texts. Columbia University Press. New York. 497 pp.

Summary: The stories in this book were collected on the Lapwai reservation during 1929 and 1930. Since the Nez Perce people telling the stories could trace them back three generations, Phinney believed these versions were more authentic than others were. The book presents each story in the Nez Perce language, with a literal and an interpreted translation. The mention of plants in many of the stories emphasizes their importance in Nez Perce culture. For example, in the story of the creation of the Nimipu people, Coyote uses a clematis rope (p. 19) and, as he is being drawn into the Monster, he leaves along the way camas roots and serviceberries for the people to find (p. 27).

Methodology: Interviews, oral tradition

Significance to Nez Perce ethnobotany: Some of the plants important in Nez Perce culture are mentioned in these stories, especially tules, black tree lichen, camas, kouse, willow, and serviceberries.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Phinney, Archie

Author category: Nez Perce linguist

Background: Nez Perce tribal employee; BIA employee; taught in the USSR; student of Franz Boas

Special interests: Traditional stories

Methodology: Interviews, oral tradition

Context: academic/Nez Perce tradition

Specific Nez Perce plants discussed in this reference (12 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice.

Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.
Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*,
Wyethia amplexicaulis; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Celtis reticulata* Torrey**

Nez Perce name: **kaámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits.

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Plew, M. G. 1990. Modeling alternative subsistence strategies for the middle Snake River. North American Anthropologist 11(1): 1-15.

Summary: This paper investigates winter subsistence strategies of the Snake River Shoshone and suggests three possible alternative approaches to a winter food supply: focusing on riverine resources, root foods with salmon, or game animals. The paper emphasizes the importance of camas both because of its nutritional value and because of its availability, predictability, and reliability.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The Shoshone economy was similar to that of the Nez Percés and involved many of the same food plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Plew, Mark G.

Author category: archaeology, anthropology

Background: Professor of Anthropology, Boise State University, ID; Ph.D. 1985, Indiana University, M.A. 1974, B.A. 1972

Special interests: Archaeology of western north America; traditional and recent subsistence strategies, post-contact history

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Perideridia gairdneri (Hooker & Arnott) Mathias

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

Prunus virginiana Linnaeus

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative

(wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Plew, M. G. 1992. Nutritional analysis of camas (*Camassia quamash*) from southern Idaho. Northwest Anthropological Research Notes 26(2): 217-223.

Summary: Plew analyzed camas bulbs from three populations in southern Idaho, all near archaeological sites. Moisture content, protein, fats, carbohydrates, fiber, ash, and energy yield were compared with results from earlier studies and confirmed high caloric and protein content.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: Confirms the food value of camas in the indigenous diet.

Implications for future management of Nez Perce National Historical Park lands: Localities sampled for this study were on the Camas Prairie and the Owyhee uplands.

About the author: Plew, Mark G.

Author category: archaeology, anthropology

Background: Professor of Anthropology, Boise State University, ID; Ph.D. 1985, Indiana University, M.A. 1974, B.A. 1972

Special interests: Archaeology of western north America; traditional and recent subsistence strategies, post-contact history

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Point, N. 1967. Wilderness Kingdom Indian Life in the Rocky Mountains: 1840-1847: The journals & paintings of Nicolas Point. Holt, Rinehart and Winston. New York. 274 pp.

Summary: Nicolas Point was a Jesuit missionary who worked with the Coeur d'Alenes, Flatheads, and Blackfoots in the mid 1800's. This book is a translated compilation of his notes and paintings. Most of Fr. Point's observations concern his missionary activities and the conversion of Indians, but he does include comments on plants important to the people with whom he worked. The paintings are delightful and include one showing an Indian family in winter with "food gathered from the trees in the forest" [probably either black tree lichen or inner bark] (page 86) and another illustrating a camas meadow (page 126). On pages 47 and 50 Point describes the Indians' "huts" and ways of living. Root foods are mentioned on pp. 70, 79, and 166, including a description of digging and preparing camas and cooking black tree lichen.

Methodology: Field observations, interviews

Significance to Nez Perce ethnobotany: Point included some notes on Native plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Point, Nicolas

Author category: Jesuit missionary

Background: Jesuit missionary in northern Idaho during the middle 1800's. Former law clerk; educated at St. Acheul College near Amiens, France; worked in Switzerland and Spain before becoming missionary. In 1841 Point joined Fr. DeSmet's party journeying to the Rocky Mountains

Special interests: Jesuit priesthood, conversion of Indians

Methodology: Field observations, interviews

Context: anecdotal

Specific Nez Perce plants discussed in this reference (11 total)

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

Perideridia gairdneri (Hooker & Arnott) Mathias

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

Prunus virginiana Linnaeus

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Shepherdia canadensis (Linnaeus) Nuttall

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Valeriana edulis Nuttall ex Torrey & Gray

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Pokotylo, D. L., and P. D. Troese. 1983. Archeological evidence for prehistoric root gathering on the southern interior Plateau of British Columbia: A case study from Upper Hat Creek Valley. Canadian Journal of Anthropology 7(2): 127-157.

Summary: Evidence of root food processing activities can be observed in the archaeological record, and this paper investigates such evidence at a site in southern British Columbia. Carbonized plant remains associated with pit ovens suggested that root foods may have been even more important in past indigenous diets than at the time of European contact. The authors conclude that root food preparation was a collective effort, that pit ovens were frequently reused, and that repeatedly-used root processing camps were established near root food sources.

Methodology: Archaeological excavation and interpretation, library research

Significance to Nez Perce ethnobotany: This paper is important in establishing the importance of root foods in the pre-contact indigenous Plateau diet and in suggesting the communal nature of root food processing.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Pokotylo, David L.

Author category: Archaeology

Background: Associate Professor, Department of Anthropology and Sociology, University of British Columbia, Vancouver; Ph.D. University of British Columbia

Special interests: Western North America

Methodology: Archaeological excavation and interpretation, library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí łay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with “pinched” tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in “pudding.” Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten (“The natives reckon the root unfit for food.” Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

Pond, L. 1995. Foods of the Nez Perce. World Wide Web site
<http://www.uidaho.edu/~pond9313/foods.html> : 1 p.

Summary: This Web site is a general description of wild foods important to the Nez Perce.

Methodology: Oral tradition, library research

Significance to Nez Perce ethnobotany: The author is a member of the Nez Perce Tribe.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Pond, Leigh

Author category: Nez Perce

Background: Tribal member

Special interests: Nez Perce culture and history

Methodology: Oral tradition, library research

Context: Nez Perce tradition

Specific Nez Perce plants discussed in this reference (7 total)

Allium spp.

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven

2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs
Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Ray, V. F. 1932. The Sanpoil and Nespelem: Salishan Peoples of Northeast Washington. University of Washington Publications in Anthropology. Seattle, WA. 237 pp.

Summary: This paper is based on several years' field research with the Sanpoil and Nespelem people. It summarizes important aspects of their culture, including the use of plants for food, industry, and medicine.

Methodology: Field research

Significance to Nez Perce ethnobotany: Although these cultures are Salishan, many of their uses of plants are the same as in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ray, Verne F.

Author category: Anthropology

Background: Professor of Anthropology, consulting anthropologist, research director, university administrator. Ph.D. Yale University 1939; M.A. University of Washington 1932, B.A. 1931

Special interests: Political organization, economic structure, ethnohistory, Indian relationships with U.S. federal government, human sensory perceptions

Methodology: Field research

Context: cultural anthropology, ethnohistory

Specific Nez Perce plants discussed in this reference (58 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers Use category: Technology, Medicine
Specific uses: Technology: fine cordage for basketry, haffing and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).
Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.
Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.
Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**
Plant family: Apocynaceae English name: dogbane, "Indian-hemp"
Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.
Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).
Plant parts used: roots, stem fibers, seeds Use category: Food, Technology, Medicine
Specific uses: Food: seeds. Technology: fine cordage for soft basketry, haffing, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).
Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.
Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**
Plant family: Ericaceae English name: kinnickinick, bearberry
Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.
Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.
Plant parts used: leaves, berries Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic
Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.
Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.
Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé qe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with

other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ceanothus sanguineus* Pursh**

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia

Plant parts used: bark, wood, leaves

Use category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores,

venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisimseqe**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried

root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Leymus cinereus (Scribner & Merrill) A. Löve

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Mentha arvensis Linnaeus

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

Opuntia polyacantha Haworth

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in

more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tíltíltít**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus parviflorus Nuttall

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix scouleriana* Barratt**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to

scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetelwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Ray, V. F. 1939. Cultural Relations in the Plateau of Northwestern America. Frederick Webb Hodge Anniversary Publication Fund, The Southwest Museum 3: 154 pp. Los Angeles, CA.

Summary: This paper presents the results of Ray's doctoral dissertation. He studied cultural diversity among Columbia Plateau American Indians, focusing on social structure and political organization. He also discusses aspects of material culture, including some plant use. His discussions of mat lodge structure and canoe types are particularly interesting.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Ray included the Nez Perce people in his studies.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ray, Verne F.

Author category: Anthropology

Background: Professor of Anthropology, consulting anthropologist, research director, university administrator. Ph.D. Yale University 1939; M.A. University of Washington 1932, B.A. 1931

Special interests: Political organization, economic structure, ethnohistory, Indian relationships with U.S. federal government, human sensory perceptions

Methodology: Field and library research

Context: cultural anthropology, ethnohistory

Specific Nez Perce plants discussed in this reference (5 total)

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried

for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Ray, V. F. 1971. Lewis and Clark and the Nez Perce Indians. Great Western Series 10, Potomac Corral, The Westerners, Washington, D.C. 25 pp.

Summary: Ray discusses relations between the Corps of Discovery and the Nez Perce people as well as the political influence of the Nez Percés among other indigenous groups. The booklet does not mention specific plants but discusses how the Nez Percés provided large quantities of roots and root bread for the Lewis and Clark party, and describes the ritual eating of root foods. Included is a map of Lewis and Clark's route over the Lolo Trail.

Methodology: Library and field research

Significance to Nez Perce ethnobotany: Ray's paper is based on Lewis and Clark journals and on discussions with Nez Perce people. While it does not directly mention specific plant species, the paper is important because it underscores the importance of root foods in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands: Traditional root-digging areas are mentioned.

About the author: Ray, Verne F.

Author category: Anthropology

Background: Professor of Anthropology, consulting anthropologist, Research Director, university administrator. Ph.D. Yale University 1939; M.A. University of Washington 1932, B.A. 1931.

Special interests: Political organization, economic structure, ethnohistory, Indian relationships with U.S. federal government, human sensory perceptions

Methodology: Field research, interviews, library research

Context: Cultural anthropology, ethnohistory

Specific Nez Perce plants discussed in this reference (none)

Ray, V. F. 1974. Ethnohistory of the Joseph Band of the Nez Perce Indians 1805-1905. Petitioner's Exhibit 75, Indian Claims Commission Docket Reprint 186: 99 pp. Garland Publishing Company, New York.

Summary: This is Ray's record of the history of Nez Perce contact with Euroamericans beginning with the arrival of the horse. Ray includes a section on subsistence economy and discusses the seasonal round, root processing, and storage of food. He emphasizes the importance of camas-digging areas in tribal alignments, social relations, and traveling groups. Like Chalfant, Ray suggests that the high degree of skill and specialization in use of roots and other plant foods implies great antiquity for these food sources.

Methodology: Field research, interviews, library research

Significance to Nez Perce ethnobotany: The paper includes good information on Nez Perce food plants.

Implications for future management of Nez Perce National Historical Park lands: Ray mentions traditional gathering areas. Camas-digging areas: Weippe Prairie, Moscow, and Camas Prairie, ID. Cous-digging areas: Camas Prairie, ID, and Enterprise, OR. Important yampa-digging area: Camas Prairie, ID. Important huckleberry-picking areas: along the Salmon River, south of Grangeville, Elk City, Pierce, Huckleberry Butte E of Clarkia, Musselshell Creek, Craig Mountain above Slickpoo (all ID), and the Wallowa Valley, OR.

About the author: Ray, Verne F.

Author category: Anthropology

Background: Professor of Anthropology, consulting anthropologist, research director, university administrator. Ph.D. Yale University 1939; M.A. University of Washington 1932, B.A. 1931

Special interests: Political organization, economic structure, ethnohistory, Indian relationships with U.S. federal government, human sensory perceptions

Methodology: Field research, interviews, library research

Context: cultural anthropology, ethnohistory

Specific Nez Perce plants discussed in this reference (19 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early

summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots

eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Perideridia gairdneri (Hooker & Arnott) Mathias

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

Pinus contorta Douglas ex Loudon

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with

grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streambanks, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Relander, C. 1956. Drummers and Dreamers. The Caxton Printers, Ltd. Caldwell, ID. 345 pp.

Summary: Click Relander developed a close relationship with the Wanapum Indians. His book concerns these people, their traditions, and the Dreamer religion started by the spellbinding Smohalla. Relander includes descriptions of the First Foods Feast, camas roasting, and making dugout canoes. The Wanapum, unlike most Northwest groups, continued to spend winters in a mat lodge at Priest Rapids during the 1950's.

Methodology: Field research

Significance to Nez Perce ethnobotany: The Wanapum and Nez Perce intermingled in certain villages and much of their use of plants was similar.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Relander, Clifford C ("Click").

Author category: History, journalism

Background: City Editor, Yakima Daily Republic, Washington; Visalia Junior College; Otis Art Institute, Los Angeles

Special interests: Pacific Northwest history

Methodology: Field research

Context: Native American, popular interest

Specific Nez Perce plants discussed in this reference (8 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine
Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.
Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs
Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.
Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Rivera, T. 1949. Diet of a food-gathering people, with chemical analysis of salmon and saskatoons. In Smith, M.W. Indians of the Urban Northwest : 19-36. Columbia University Contributions to Anthropology 36. New York.

Summary: Rivera's chapter discusses nutritional value of salmon and serviceberries in a coastal Salish diet. Table 4 presents comparison of nutrients in Amelanchier fruits with several common contemporary commercial fruits.

Methodology: Library research, chemical analysis

Significance to Nez Perce ethnobotany: Serviceberries were an important Nez Perce food.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Rivera, Trinita

Author category: nutrition

Background:

Special interests:

Methodology: Library research, chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

Amelanchier alnifolia (Nuttall) Nuttall ex M. Roemer

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Roll, T. E., and S. Hackenberger. 1998. Prehistory of the Eastern Plateau. Pp. 120-137 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: It surprises me that use of the terms “prehistory” and “prehistoric” are still overwhelmingly prevalent among archaeologists, since some Native American groups are offended by them. This chapter reviews the culture history of the eastern Plateau, including the eastern portions of Nez Perce territory. Findings at archaeological sites in the region are related to environmental factors, especially areas important for subsistence. There is a discussion of camas meadows (p. 120) and one of precipitation patterns related to subsistence (p. 125).

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This discussion reveals early history revealed by excavations at Nez Perce camps and settlements.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Roll, Tom E.

Author category: Archaeology

Background: Department of Sociology and Anthropology, Montana State University, Bozeman

Special interests: Past western North America cultures

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Pinus albicaulis Engelmann

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered

from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

Ronda, J. P. 1984. Lewis and Clark Among the Indians. University of Nebraska Press. Lincoln. 310 pp.

Summary: This book includes discussion of the Corps of Discovery's contacts with the Nez Perces (pp. 157-164 and 221-236). It describes Nez Perce mat lodges. Ronda also relates how Broken Arm used kouse mush as a symbol of unity. This occurred when the council of Nez Perce chiefs and elders had decided to cooperate with Euroamericans in trade, and Broken Arm asked all of his people to indicate acceptance of the decision by eating the kouse mush he offered them.

Methodology: Library research

Significance to Nez Perce ethnobotany: The book presents an analysis of events important in Nez Perce history.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ronda, James P.

Author category: History

Background: Professor, Department of History, Youngstown State University, OH; Ph.D. University of Nebraska, Lincoln, 1969, MS 1967; B.A. Hope College 1965

Special interests: Indian history, western U.S. during the contact period

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Pinus ponderosa Miller

Nez Perce name: **lá qa;** inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies

(foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Ross, J. A. 1998. Spokane. Pp. 271-282 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Ross's summary of Spokane lifeways is based on his years of working with and interviewing Spokane people. This is one of very few publications where Spokane use of plants is discussed.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Spokane use of plants is very similar to Nez Perce plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ross, John A.

Author category: Anthropology

Background: Department of Geography and Anthropology, Eastern Washington University, Cheney. M.A. Washington State University, Pullman

Special interests: Cultural Anthropology, North America, Oceania, British Isles

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (41 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **picpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: **wí tx**

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes

with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as

protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair

growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: wood, bark

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisimseqe**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimile**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers);

rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant,

antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking.

Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix scouleriana* Barratt**

Nez Perce name: táxs

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streambanks, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Taxus brevifolia Nuttall

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Trillium ovatum Pursh

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Ruby, R. H., and J. A. Brown. 1970. *The Spokane Indians: Children of the Sun*. University of Oklahoma Press. Norman, OK. 346 pp.

Summary: This book tells of the “civilizing” of the Spokane Indians through the fur trade, missionaries, other Euroamerican settlers, and military battles. Chapter one describes traditional Spokane life and discusses some of the plants important to Spokane people.

Methodology: Library research

Significance to Nez Perce ethnobotany: Camas-digging and its importance are mentioned throughout the book.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ruby, Robert H.

Author category:

Background:

Special interests:

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (17 total)

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first

fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled

rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter

they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in

more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes aureum Pursh

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Ribes cereum Douglas

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Sambucus cerulea Rafinesque

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.
Nutritional value: Fruits 7-16% mg vitamin C.
Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Sappington, R. L. 1989. The Lewis and Clark expedition among the Nez Perce Indians: the first ethnographic study in the Columbia Plateau. Northwest Anthropological Research Notes 23(1): 1-33.

Summary: Sappington has assessed and collated information from the various published analyses of the Corps of Discovery's journals, focusing on ethnographic observations and Comments. He has organized information according to Kroeber's cultural element distribution lists. This paper includes a thorough review of plant materials mentioned in the Corps of Discovery journals as being used by the Nez Perce.

Methodology: Library research

Significance to Nez Perce ethnobotany: This analysis goes deeper than most papers on Native plant use described in the Lewis and Clark party's journals and presents an excellent summary of Nez Perce ethnobotany as understood by this expedition.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Sappington, R Lee.

Author category: Archaeology

Background: Associate Professor, Department of Sociology and Anthropology, University of Idaho, Moscow

Special interests: Archaeology and culture change of the Columbia Plateau, lithic technology, western North American history

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (19 total)

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorus. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorus.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorus.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints

for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Sappington, R. L. 1994. The Prehistory of the Clearwater River region, North Central Idaho. Ph.D. Thesis, Washington State University. Pullman, WA. 422 pp.

Summary: In this thesis Sappington discusses the culture history of the Columbia Plateau and analyzes data from archaeological sites along the Clearwater River and its tributaries. He develops a cultural chronology for the Clearwater Region that differs in some respects from the Leonhardy and Rice chronology for the lower Snake River.

Methodology: Field, laboratory, and library research

Significance to Nez Perce ethnobotany: No plant materials were recovered from the Clearwater sites discussed, but plant processing tools suggest kinds of plant foods used.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Sappington, R Lee.

Author category: Archaeology

Background: Associate Professor, Department of Sociology and Anthropology, University of Idaho, Moscow

Special interests: Archaeology and culture change of the Columbia Plateau, lithic technology, western North American history

Methodology: Field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (48 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern.

Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, pipe stems, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Alnus rhombifolia* Nuttall**

Nez Perce name:

Plant family: Betulaceae

English name: white alder

Description: Tree up to 60 ft tall, bark silvery-white, leaves serrate, fruits small dry, wingless, in small cones.

Habitat: Along permanent streams at low to high elevations of inland Northwest US, California, British Columbia, Baja California.

Plant parts used: bark, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: stimulating circulation, treating tuberculosis or lymphatic ailments (bark decoction); skin inflammations (leaves). Spiritualism: stems for incense

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Betula occidentalis Hooker

Nez Perce name: **heslîps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ceanothus sanguineus* Pursh**

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia

Plant parts used: bark, wood, leaves

Use category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits.

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Festuca idahoensis* Elmer**

Nez Perce name: **walim pe ks**

Plant family: Poaceae

English name: Idaho fescue

Description: Cespitose perennial grass with very thin usually bluish-green leaves and awned grain fruits.

Habitat: Grasslands, steppe, and montane meadows, low to high elevations; British Columbia and Alberta south to the Sierra Nevada and east to Utah and Colorado.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: food preparation

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhoea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;

***Perideridia bolanderi* (A. Gray) A. Nelson & J.F. Macbride**

Nez Perce name:

Plant family: Apiaceae

English name: yampa

Description: Herbaceous perennial from a fleshy carrot-like taproot; leaves dissected, with long narrow segments, some of the terminal leaf segments very long; flowers small, white, in umbrella-shaped clusters.

Habitat: Moist places (sometimes on dry hillsides) in the foothills and high plains of interior western North America (not in Washington).

Plant parts used: roots

Use category: Food

Specific uses: Food: roots.

Other plants used in similar ways: Food: *Perideridia gairdneri*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Physocarpus malvaceus* (Greene) Kuntze**

Nez Perce name:

Plant family: Rosaceae

English name: ninebark

Description: Tall shrub with alternate three-five lobed maple-shaped leaves; flowers white, in dense round clusters; fruits clustered dry capsules.

Habitat: Moderate elevations; northern inland western US and southern Canada.

Plant parts used: stems

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots. Medicine: twigs for emetic. Spiritualism: washing hunting equipment, especially arrows, for protection from spells, charm to inflict bad luck on enemies.

Special preparation: Food: roots were steam cooked

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach

ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: tíms

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: tíms

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring.

Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Love**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage:

leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking.

Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).

Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch

decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1897).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits/seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit)

decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtitqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation

Specific uses:

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark

infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever.

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Salix scouleriana* Barratt**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use category: Food

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry

(especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Sappington, R. L., C. D. Carley, K. C. Reid, and J. D. Gallison. 1995. Alice Cunningham Fletcher's "The Nez Perce Country." *Northwest Anthropological Research Notes* 29(2): 177-220.

Summary: Nez Perce elder Billy Williams prepared a map for Alice Fletcher locating 78 traditional Nez Perce villages as they existed in the early 1800's. This paper publishes that map with Fletcher's accompanying manuscript. Included are descriptions of the villages and their names; many of them were named after plants important to Nez Perce culture.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The villages named after plants indicate the importance of these plants in Nez Perce culture. For example, villages were named after serviceberry, dogbane, ponderosa pine, and tules.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Sappington, R Lee.

Author category: Archaeology

Background: Associate Professor, Department of Sociology and Anthropology, University of Idaho, Moscow

Special interests: Archaeology and culture change of the Columbia Plateau, lithic technology, western North American history

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (9 total)

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from

high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for

sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Sappington, R. L., and C. D. Carley. 1995. Alice Cunningham Fletcher's "Ethnologic Gleanings among the Nez Perce Indians." Northwest Anthropological Research Notes 29: 1-50.

Summary: As a U.S. government Allotment agent, Alice Fletcher spent 1889-1892 with the Nez Perce people and was responsible for implementing the allotment process. This paper discusses her "Ethnologic Gleanings," which include Nez Perce stories and descriptions of their customs.

Methodology: Library research

Significance to Nez Perce ethnobotany: Fletcher mentions several plants important to the Nez Perces.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Sappington, R Lee.

Author category: Archaeology

Background: Associate Professor, Department of Sociology and Anthropology, University of Idaho, Moscow

Special interests: Archaeology and culture change of the Columbia Plateau, lithic technology, western North American history

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (8 total)

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Scheuerman, R. D., and C. E. Trafzer. 1980. A Palouse Indian speaks: Mary Jim remembers. Bunchgrass Historian 8: 20-23.

Summary: This article presents selected reminiscences by Mary Jim of her life as a Palouse person. The interviews with Mary Jim were part of a project to gather information on Palouse culture, language, and history. Mary Jim describes food cache pits and mentions areas of travel during the seasonal round.

Methodology: Interviews

Significance to Nez Perce ethnobotany: Mary Jim's reminiscences include six plants known to have been used by the Nez Percés. Palouse customs were very similar to those of the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Scheuerman, Richard D.

Author category: History, Education

Background: Teacher of history, English, and Russian, Cashmere Public Schools. Diploma in Russian Defense Language Institute 1974, graduate study at Pacific Lutheran University; B.A. Washington State University 1973

Special interests: Northwest US history, Plateau Indians, German-Russian settlers

Methodology: Interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage

or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Scheuerman, R. D., and C. E. Trafzer. 1980. The first people of the Palouse Country.

Summary: This article focuses on Palouse history since the arrival of Lewis and Clark, especially military battles. It includes a sketch of Palouse subsistence during the time of early Euroamerican contact.

Methodology: Library research

Significance to Nez Perce ethnobotany: The authors briefly mention camas and other root foods. Palouse customs and subsistence were very similar to those of the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Scheuerman, Richard D.

Author category: History, Education

Background: Teacher of history, English, and Russian, Cashmere Public Schools. Diploma in Russian Defense Language Institute 1974, graduate study at Pacific Lutheran University; B.A. Washington State University 1973

Special interests: Northwest US history, Plateau Indians, German-Russian settlers

Methodology: Interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total).

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Schlick, M. D. 1994. Columbia River Basketry. University of Washington Press. Seattle. 232 pp.

Summary: This book describes various styles of basketry characteristic of the mid-Columbia River area (and the Columbia Plateau in general). Schlick describes basketmaking techniques and materials used in each basketry style. Most of the basketry materials mentioned in the book are or were used by Nez Perce basketweavers. Schlick presents an interesting discussion of the possible derivation of the term "Sally bag." One explanation of the term is that the term "Sally" derived from *Salix*, which was used in making these bags. However, there does not seem to be any record of *Salix* being used to make Sally bags. It is more likely that if the term "Sally" derived from *Sali*, it was due to the early traders and settlers confusing dogbane with willow. The photographs on page 160 illustrate a Nez Perce flat bag.

Methodology: Field, library, and museum research

Significance to Nez Perce ethnobotany: Plant materials discussed in this book were used in Nez Perce basketry.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Schlick, Mary D.

Author category: Art

Background: Adjunct Curator, Maryhill Museum of Art, Goldendale, WA; formerly wrote for The Toppenish Review

Special interests: Native arts, basketry

Methodology: Field, library, and museum research

Context: academic/popular interest

Specific Nez Perce plants discussed in this reference (24 total)

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perce preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).

Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Schuster, H. H. 1982. *The Yakimas: A Critical Bibliography*. Indiana University Press. Bloomington, IN. 158 pp.

Summary: The first 102 pages of Schuster's book are a review of Yakama history as described in the literature reviewed; the remainder of the book is the bibliography itself. Schuster discusses seasonally occupied campsites and pithouse villages as well as the change to a semi-sedentary way of life that occurred about 4500-5000 years ago. Schuster discusses the importance of root foods and, on pages 84-86, root-digging encampments.

Methodology: Library research

Significance to Nez Perce ethnobotany: The bibliography focuses on post-contact history but contains information on traditional Yakama plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Schuster, Helen H.

Author category: Anthropology

Background: Emeritus Professor, Department of Anthropology, Iowa State University, Ames; Ph.D. University of Washington 1975

Special interests: Yakama culture, indigenous religions

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (5 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood,

for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Schuster, H. H. 1998. Yakima and Neighboring Groups. Pp. 327-351 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Cultural traditions and history of the Yakama, Kittitas, Wanapam, Klikitat, and Taitnapam are described in this chapter. Plants are included in the discussions of subsistence, technology, structures, life cycle, marriage, division of labor, clothing, and curing. Important camas fields in Kittitas and Klikitat Counties were the center of large social gatherings during camas-digging season. Figure 11 is photographic scenes from a Root Feast; Figure 3 illustrates gathering and preparation of plant foods; Figure 5 shows both a temporary and a "permanent" sweat lodge.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The culture of these peoples, especially the Wanapam and the Yakama, is closely similar to those of the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Schuster, Helen H.

Author category: Anthropology

Background: Emeritus Professor, Department of Anthropology, Iowa State University, Ames; Ph.D. University of Washington 1975

Special interests: Yakama culture, indigenous religions

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (25 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Alnus incana (Linnaeus) Moench

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled

rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly “a single oz of dried root gave sufficient/nourishment for a full meal” (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and “planting” it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, “striped” with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by “downstream” groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, “Indian-celery”

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, “striped” with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled.

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*istis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: *cawítx*

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Picea engelmannii* Parry**

Nez Perce name: *heslíps*

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhus glabra* Linnaeus**

Nez Perce name: **tíííííííííí**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits/seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Shepherdia canadensis (Linnaeus) Nuttall

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Scrimsher, L. S. 1967. Native Foods Used by the Nez Perce Indians of Idaho. MS thesis (Home Economics), University of Idaho. Moscow. 92 pp.

Summary: This thesis reviews important native Nez Perce foods and traditional preparation methods. Scrimsher discusses 39 plants important to the Nez Percés and analyzes the nutrient content of 14 food plants: protein, fat, fiber, water, ash, carbohydrates, and minerals. Comparing these results with analysis of analogous contemporary foods, the native foods were higher in all nutrients except iron. Scrimsher suggests that the Nez Percés' strong teeth resulted from their calcium-rich traditional diet and that Nez Perce food-preservation methods were the forerunner of today's instant foods. Tables 1-3 compare nutrients in traditional and contemporary foods. Table 4 summarizes the proportions of Nez Percés using native foods at the time of Scrimsher's study. Also included are photographs of the plant specimens identified by Scrimsher's Nez Perce consultants and of utensils used in traditional food preparation and storage.

Methodology: Library research, interviews, plant collecting, participation, chemical analysis

Significance to Nez Perce ethnobotany: This is the first nutritional analysis of Nez Perce foods and is directly relevant.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Scrimsher, Leda S.

Author category: Nutritional analysis, relating plants to cultural traditions, interviews and plant collection

Background: MS Home Economics University of Idaho, Moscow

Special interests: Nutritional comparison of traditional and recent foods, ethnobiology

Methodology: Library research, interviews, plant collecting, participation, chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (31 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or

sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Betula occidentalis Hooker

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

Calochortus elegans Pursh

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: cat's-ear

Description: Small herbaceous perennial from a bulb, with one flat narrow basal leaf, flowers with three white petals usually with a purple crescent.

Habitat: Grassy slopes and open forests in the mountains; Northwest US and northern California.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer and boiled.

Other plants used in similar ways: Food: *Triteleia grandiflora*.

Comments: Bulbs are small and deep in the soil.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Cirsium scariosum Nuttall

Nez Perce name: **títux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

Crataegus columbiana T. Howell

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Dicentra uniflora* Kellogg**

Nez Perce name: **sáyxsayk**

Plant family: Fumariaceae

English name: steer's head

Description: Delicate herbaceous perennial from a cluster of elongate fleshy roots; leaves divided and "fern", flowers white to pink, one per stalk, shaped like a steer's head.

Habitat: Well-drained soils from the foothills to subalpine montane western US.

Plant parts used: roots

Use category: Food

Specific uses: Food: a famine food according to one report.

Special preparation: Food: the roots were reportedly eaten fresh

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Frasera fastigiata* (Pursh) Heller**

Nez Perce name:

Plant family: Gentianaceae

English name: clustered frasera

Description: Tall succulent herbaceous perennial with whorled leaves, a dense spike of blue flowers with four petals.

Habitat: Moist meadows and moist open forests, lowlands to moderate elevations; Blue Mountains of Oregon and Washington, central and northeast Idaho.

Plant parts used: roots, stems, and leaves

Use category: Food

Specific uses: Food: supplementary fresh vegetable.

Special preparation: Food: roots were dug in summer and boiled or baked, sometimes overnight in pit oven (they contain inulin). Stems and leaves were gathered in June-July and eaten fresh.

Other plants used in similar ways: Food: *Cirsium scariosum*.

Comments: In Nez Perce country this plant occurred on plateau wet prairie meadows but most of the habitat was lost to farming.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parship

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Ledum glandulosum Nuttall

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

Lewisia redeviva Pursh

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes inerme* Rydberg**

Nez Perce name: **pí lus**

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: *Ribes* seeds are high in gamma-linoleic acid.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus nivalis Douglas ex Hooker

Nez Perce name: **cicmúxcicmux**

Plant family: Rosaceae

English name: snow dewberry

Description: Prickly bramble vine with evergreen prickly compound leaves (leaflets often lobed); flowers pink to purple or white, with five petals; fruits red.

Habitat: Moist, open to shaded mountain slopes; British Columbia to southwest Oregon and east to Idaho.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: fruits were eaten fresh, or in productive years they were dried for winter.

Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Scully, V. 1970. A Treasury of American Indian Herbs, Their Lore and Use for Food, Drugs, and Manufacture. Crown Publishers. New York. 306 pp.

Summary: Scully's book describes uses of selected western North American plants, listed alphabetically by common names. The lack of Latin names could lead to confusion because of variability in common names. Camas roasting is described on page 23.

Methodology: Library research

Significance to Nez Perce ethnobotany: Nez Perce plants are included in this book.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Scully, Virginia

Author category: Herbalism

Background:

Special interests: Native American ethnobotany

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (19 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cornus sericea Linnaeus var. sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps,

spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing

(root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Linum perenne Linnaeus

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive;

leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

Ribes aureum Pursh

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Sambucus cerulea Rafinesque

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Shepherdia canadensis (Linnaeus) Nuttall

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

Typha latifolia Linnaeus

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Seltice, J. 1990. Saga of the Coeur d'Alene Indians: An Account of Chief Joseph Seltice (edited by E.J. Kowrach and T.E. Connolly). Ye Galleon Press. Fairfield, WA. 372 pp.

Summary: This book is a history of the Coeur d'Alene people since Euroamerican contact. It contains several references to plant use by the Coeur d'Alenes, including the fact that one of the Catholic missionaries, Father Joset, ate "what the Indians ate." On p. 274 Marceline Seltice Kevis describes the process for cooking "smalaq" (black pine lichen, *Bryoria*). Chief Joseph Seltice mentions an incident involving replacement of Euroamerican material with the traditional Coeur d'Alene equivalent (p. 49). During construction of a church the rope brought by the missionaries broke, and the Indians made a new rope from sedges. This sedge rope worked very well and did not break. There are also descriptions of food gathering, including camas-digging and berrypicking. An interesting anecdote describes the travels of the 16-year-old Blackfoot girl Magdeline across the Bitterroots to marry a Coeur d'Alene man (pp. 192-198). Traveling alone, Magdeline brought dried camas for sustenance and also gathered native berries and other foods along the way.

Methodology: Interviews

Significance to Nez Perce ethnobotany: The plants mentioned in this book were all important to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Seltice, Chief Joseph

Author category: Coeur d'Alene leader

Background:

Special interests: Coeur d'Alene history and cultural traditions

Methodology: Interviews

Context: Coeur d'Alene

Specific Nez Perce plants discussed in this reference (13 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **picpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Crataegus douglasii Lindley

Nez Perce name: císnim

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Rubus parviflorus Nuttall

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Vaccinium* spp.**

Nez Perce name: cemítk

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Shawley, S. D. 1977. Nez Perce Trails. University of Idaho Anthropological Research Manuscript Series No. 44. Moscow, ID. 104 pp.

Summary: "Nez Perce Trails" is a set of maps of important traditional Nez Perce Trails. The maps are reduced copies of the originals, which were drawn on USGS topographic quadrangles and are on file at the Laboratory of Anthropology, University of Idaho, Moscow. In addition to travel routes, the maps show areas of important Nez Perce activity, including some important root-digging areas.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: This study illustrates important camas and kouse-digging areas.

Implications for future management of Nez Perce National Historical Park lands: Shawley's maps of important root food areas can be very helpful in land management.

About the author: Shawley, Stephen D.

Author category: Anthropology

Background: Staff of Nez Perce National Historical Park; M.A. University of Idaho 1974

Special interests: Indian artifacts

Methodology: Field and library research, interviews

Context: academic

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Slickpoo, A. P. 1972. Nu mee poom tit wah tit (Nez Perce legends): Allen P. Slickpoo, director, Leroy L. Seth, illustrator, Deward E. Walker, Jr., technical advisor. Nez Perce Tribe of Idaho. Lapwai. 214 pp.

Summary: Written and published by Nez Perce people, this book presents 51 Nez Perce stories and an introductory chapter explaining the role of these stories in children's education. These stories are expressed in more contemporary English than earlier compilations. Many of the stories are illustrated with a line drawing, and on pp. xxi-xxii are photographs of legendary Nez Perce landmarks. The story "Skunk Goes Looking For His Scent" (pp. 28-36) mentions more than 20 plants. It tells of how skunk encountered different plants along his way and how some of them were sweet and helpful to him and others were not. On his return trip he gave the sweet plants a sweet taste and the others a bitter or sour taste.

Methodology: Oral tradition and interviews

Significance to Nez Perce ethnobotany: Nez Perce stories were an important means of educating children. Each story contains a lesson, and some of the lessons concern plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Slickpoo, Alan P.

Author category: Nez Perce ethnography

Background: Cultural Resources Director, Nez Perce Tribe of Idaho

Special interests: Nez Perce culture and traditions, Nez Perce language

Methodology: Oral tradition and interviews

Context: Nez Perce elder

Specific Nez Perce plants discussed in this reference (31 total)

Allium spp.

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Amelanchier alnifolia (Nuttall) Nuttall ex M. Roemer

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cirsium scariosum* Nuttall**

Nez Perce name: **titux**

Plant family: Asteraceae

English name: elk thistle

Description: Native herbaceous perennial thistle from stout taproot, sometimes with very short stem but up to four ft. tall, spiny, flowers white to purple, in dense spiny heads.

Habitat: Moist meadows, streamsides, and wet places, tolerant of alkali; inland western North America from foothills to high mountains.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: a seasonal fresh vegetable; root especially liked.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and eaten fresh, pit-cooked whole, roasted in baskets, or boiled. Stems were gathered during July-August, peeled, and eaten fresh.

Other plants used in similar ways: Food: *Cirsium undulatum*, *Frasera fastigiata*

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Leymus cinereus (Scribner & Merrill) A. Love

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called Elymus cinereus.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled.

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers);

rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes aureum Pursh

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

Ribes cereum Douglas

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Ribes inerme Rydberg

Nez Perce name: **pí łus**

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **pí łus**

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa* spp.**

Nez Perce name: **łá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus ursinus Chamisso & Schlechtendal

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Sambucus cerulea Rafinesque

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Slickpoo, A. P. Sr. 1973. Noon ne-me-poo (We, the Nez Perces): Culture and History of the Nez Perces. Nez Perce Tribe of Idaho. Lapwai. 316 pp.

Summary: This book describes important Nez Perce cultural traditions and talks about the Nez Perce viewpoint. Slickpoo reviews the history of Nez Perce contact with Euroamericans beginning with the arrival of the Corps of Discovery in 1805. The book includes descriptions of First Feasts, name-giving, and traditions around a girls first root-digging or berry-picking.

Methodology: Oral history

Significance to Nez Perce ethnobotany: Nez Perce ethnography presented by a Nez Perce elder.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Slickpoo, Alan P.

Author category: Nez Perce ethnography

Background: Cultural Resources Director, Nez Perce Tribe of Idaho

Special interests: Nez Perce culture and traditions, Nez Perce language

Methodology: Oral history

Context: Nez Perce elder

Specific Nez Perce plants discussed in this reference (17 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke),

respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Taxus brevifolia Nuttall

Nez Perce name: támqay

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Smith, A.H. 1953. The Indians of Washington. Research Studies of the State College of Washington XXI: 85-113.

Summary: Smith discusses differences between coastal and interior Washington Indians, including physical characteristics, language, and culture. Pp. 98-107 contain a detailed comparison of two Washington groups: the Klallam to represent the Coastal groups and the Sanpoil to represent Interior groups.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Some important Nez Perce plants are included in this comparison.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Smith, Allan H.

Author category: Cultural anthropology

Background: Professor of Anthropology and University administrator Washington State University, Pullman; NSF Program Director. Ph.D. Yale University 1941, A.B. 1935

Special interests: Anthropology of the western U.S., Micronesia, the Far East

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (13 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, haffing and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **páxs, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Helianthus annuus Linnaeus

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Lewisia rediviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.
Plant parts used: wood, bark, fruits Use category: Food, Technology, Medicine, Cosmetic
Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."
Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.
Nutritional value: Fruits 30 mg vitamin C per 100g.
Other plants used in similar ways: Food: *Prunus emarginata*.
Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**
Plant family: Cyperaceae English name: tules, bulrush
Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.
Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.
Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology
Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).
Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.
Nutritional value: Shoots 42 kcal per 100g.
Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**
Plant family: Cupressaceae English name: western redcedar
Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.
Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.
Plant parts used: roots, inner bark, wood Use category: Food, Beverage, Technology, Medicine, Spiritualism
Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood,

for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Smith, C. S., and L. M. McNeas. 1999. Facilities and hunter-gatherer long-term land use patterns: An example from southwest Wyoming. *American Antiquity* 64(1): 117-136.

Summary: This paper evaluates factors influencing the location and long-term use of food storage pits. The authors conclude that repeated occupation of localities containing food storage pits is most closely related to proximity of a stable predictable food resource--in this case, biscuitroot. The very existence of pit storage facilities would encourage reuse of the area, as reuse the energy expenditure of constructing new storage facilities.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The factors influencing construction and repeated use of food storage pits in southwest Wyoming would be the same factors important in Nez Perce territory. This paper illustrates how plant food resources determined location of settlements as well as patterns of movement.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Smith, Craig S.

Author category: Archaeology

Background:

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Smith, H. L. 1976. Wonderful Wapato: The Wild Potato. Smith, Smith, and Smith Publishing Co. Lake Oswego, Oregon. 16 pp.

Summary: This pamphlet describes wapato, an important staple of indigenous groups along the lower Columbia River and other areas. It describes collecting and cooking of wapato, its importance as a trade item, and its use by Euroamerican explorers.

Methodology: Library research, oral history

Significance to Nez Perce ethnobotany: The Nez Percés obtained wapato through trade.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Smith, Harriet L.

Author category: Writer

Background:

Special interests: Plant use in the Northwest, history

Methodology: Library research, oral history

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

Smith, H. L. 1978. Camas: The Plant That Caused Wars. Smith, Smith, and Smith Publishing Company. Lake Oswego, OR. 19 pp.

Summary: This pamphlet is a general review of the importance of camas in the Native American diet and how destruction of camas meadows by Euroamerican settlers led to wars, including the Bannock War in 1878. Smith also mentions several geographic place names including camas.

Methodology: Library research

Significance to Nez Perce ethnobotany: The paper includes reports by early explorers and settlers documenting of Nez Perce use of camas.

Implications for future management of Nez Perce National Historical Park lands: Smith stresses the impact of camas habitat destruction on traditional Nez Perce culture.

About the author: Smith, Harriet L.

Author category: Writer

Background:

Special interests: Plant use in the Northwest, history

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (4 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Spier, L. 1930. Klamath Ethnography. University of California Publications in American Archaeology and Ethnography 30: 338 pp. University of California Press, Berkeley, CA.

Summary: Spier's study of the Klamath people is based on time spent with them during 1925 and in 1926. The paper discusses many aspects of Klamath culture, including material culture, social customs and social organization, beliefs, ceremonies, and the influences of Euroamerican cultures. Spier also compares Klamath culture with other western North American cultures, concluding that while influenced by California and Great Basin traditions, Klamath culture has most similarities with cultures of the Columbia Plateau. On pp. 225-227 is a table comparing aspects of Klamath culture with other cultures.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The Klamath people used many of the same plants used by the Nez Percés, with different emphases.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Spier, Leslie

Author category: Ethnology, Anthropology

Background: Professor of Anthropology, University of New Mexico, 1939 until 1955 retirement. University of Washington 1920-1939. Ph.D. 1920 Columbia University (student of Franz Boas); associated with American Museum of Natural History

Special interests: Antiquity of humans in America, ethnology of western Indians, culture processes and culture growth, distribution of cultural phenomena

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (42 total)

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cercocarpus ledifolius Nuttall

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Iris missouriensis* Nuttall**

Nez Perce name:

Plant family: Iridaceae

English name: wild blue iris

Description: Herbaceous perennial from shallow rhizomes forming dense clumps; leaves thick, strap-shaped, aligned edgewise to flowering stalk; flowers pale to deep blue marked with white; fruits capsules.

Habitat: Moist to wet places at low to moderate elevations; San Juan Islands and inland western US, southern Canada, and northern Mexico.

Plant parts used: rhizomes

Use category: Medicine

Specific uses: Medicine: stomachache, emetic, bladder ailments, gonorrhoea, earache, (decoction, warmed for ear); toothache (rhizome piece placed in hollow); sores (seed poultice)

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat

lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Lomatium spp.

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

Nuphar polysepalum Engelmann

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

Perideridia gairdneri (Hooker & Arnott) Mathias

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were

dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phragmites australis* (Cavanilles) Trinus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood)

roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae

English name: antelope bitterbrush

Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.

Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.

Plant parts used: bark, roots, seeds

Use category: Technology, Medicine

Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus ursinus Chamisso & Schlechtendal

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Sium suave Walter

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Spinden, H. J. 1908. The Nez Perce Indians. American Anthropological Association Memoirs 2: 171-274.

Summary: Spinden's study presents the earliest detailed information on traditional Nez Perce plant use. The paper summarizes archaeological findings in traditional Nez Perce territory and discusses Nez Perce life in the early 20th century--territory and environment, bands, the Nez Perce calendar, material culture, and foods. Spinden includes a description of digging and preparation of camas and kouse.

Methodology: Spinden was commissioned by the Peabody Museum, Harvard University, to study the archaeology and ethnology of the Nez Perce region. To accomplish this he did library research, interviews with the Nez Perce people, and site visits

Significance to Nez Perce ethnobotany: Comments on plant use are interspersed in Spinden's report, and pp. 201-205 present more detailed information. The study is especially significant as it was conducted at a time when more of the Nez Perce people followed traditional ways.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Spinden, Herbert J.

Author category: Anthropology, archaeology

Background: Curator, American Indian Art and Primitive Cultures Museum, Brooklyn Institute. Curator American Museum of Natural History; Ph.D. 1909, Harvard University, AM 1908, A.B. 1906

Special interests: Mandan & Nez Perce Indians; peopling of the New World; early agriculture; development of the group mind through cultural leadership; ethnology & archaeology of Mexico, Central & South America

Methodology: Spinden was commissioned by the Peabody Museum, Harvard University, to study the archaeology and ethnology of the Nez Perce region. To accomplish this he did library research, interviews with the Nez Perce people, and site visits

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (44 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a basal rosette, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia megarhiza* (A. Gray) Parry ex S. Watson**

Nez Perce name:

Plant family: Portulacaceae

English name: alpine springbeauty

Description: Small succulent herbaceous perennial from a fleshy taproot; leaves in large rosettes, spatula-shaped, delicate; flowers white to deep pink.

Habitat: Gravelly soils, rock crevices, talus, montane inland western North America.

Plant parts used: root

Use category: Food

Specific uses: Food: an occasional food.

Other plants used in similar ways: Food: *Claytonia lanceolata*

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Microseris nutans* (Geyer) Schultz-Bipontinus**

Nez Perce name:

Plant family: Asteraceae

English name: nodding microseris

Description: Small herbaceous perennial from fleshy taproot, with milky juice, leaves long and narrow, flowers in yellow heads, dandelion-like, fruits with narrow scales at the top.

Habitat: Moist open places from moderate to high elevations, western interior US and British Columbia.

Plant parts used: root

Use category: Food

Specific uses: Food: roots

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium,
0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry.

Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as soak)

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Sprague, R. 1998. Palouse. Pp. 352-359 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: The chapter on the Palouse people in the Smithsonian's Plateau volume focuses on history but includes a section on subsistence. Figure 2 is a photograph of a communal tule lodge.

Methodology: Library research

Significance to Nez Perce ethnobotany: Seven plants important to the Nez Perce people are mentioned.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Sprague, Roderick

Author category: Anthropology, Archaeology

Background: Emeritus Professor of Anthropology University of Idaho; Ph.D. University of Arizona 1967; M.A. Washington State University, Pullman, 1959; B.A. 1955

Special interests: Ethnoarchaeology, Palouse people

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (6 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Triticum aestivum* Linnaeus**

Nez Perce name: **peqes**

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: what was gleaned from the fields and boiled until the kernels opened

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Statham, D. S. 1975. A biogeographic model of camas and its role in the aboriginal economy of the Northern Shoshoni in Idaho. *Tebiwa* 18(1): 59-81.

Summary: An investigation of the significance of camas in the Northern Shoshoni diet led the author of this paper to survey camas habitats in traditional Shoshoni territory. She found correlations between soil pH and flower color and both bulb size and flower color in camas (acidic soils produce smaller bulbs and purple flowers).

Methodology: Field, laboratory, and library research

Significance to Nez Perce ethnobotany: Camas was one of the most important Nez Perce plant foods, and the cultural traditions surrounding it were extremely important to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands: Statham stresses the importance of protecting camas-digging areas.

About the author: Statham, Dawn S.

Author category: Anthropology

Background: M.A. Anthropology Idaho State University 1981

Special interests: Ethnobotany, subsistence, computer modeling

Methodology: Field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin.

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Statham, D. S. 1982. Camas and the Northern Shoshoni: A biogeographic and socioeconomic analysis. Boise State University Archaeological Reports 10: 103 pp. Boise State University, Boise, ID.

Summary: A field survey mapped 34 camas areas in northern Shoshoni territory of central-eastern Idaho and correlated the plants distribution and bulb size with soil types. The author applies a predictive model developed from these data to indicate where camas stands likely occurred before agriculturalization and to explain certain aspects of cultural behavior. The importance of camas in traditional Shoshoni culture is reflected in the cultural disruption caused by loss of camas meadows to Euroamerican agriculture. Statham emphasizes the significance of camas-digging areas beyond food procurement. For example, the Big Camas Prairie was the traditional meeting grounds to prepare for the annual buffalo hunt and was a significant center for trade with other groups, including those from the southern Columbia Plateau. The opening of that area for Euroamerican settlement had profound effects on Shoshoni society and was largely responsible for the Shoshoni's participation in the Bannock War in 1878.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Nez Perce cultural behavior was based on camas in the same ways as Shoshoni culture.

Implications for future management of Nez Perce National Historical Park lands: Statham stresses the importance of protecting camas-digging areas.

About the author: Statham, Dawn S.

Author category: Anthropology

Background: M.A. Anthropology Idaho State University 1981

Special interests: Ethnobotany, subsistence, computer modeling

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez

Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Stern, T. 1998. Klamath and Modoc. Pp. 446-466 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Klamath and Modoc territory is on the southernmost fringe of the Columbia Plateau culture area. Elements of Great Basin culture are evident, but these peoples have most cultural aspects in common with the Plateau area. This chapter is a concise yet detailed comparison and characterization of Klamath and Modoc cultures, and it includes good information on plant use. The photographs in Figure 3 illustrate wikiup and earth lodge construction; Figure 5 shows a tule hat; Figure 7 shows tule moccasins and leggings.

Methodology: Library research

Significance to Nez Perce ethnobotany: Plants discussed in this chapter are also important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Stern, Theodore

Author category: Cultural Anthropology

Background: Emeritus Professor, Department of Anthropology, University of Oregon

Special interests: North American native people, southeast Asia

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (21 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried leaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: wood, bark

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds Use category: Food, Medicine
Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed);
rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in
horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites
(leaf poultice).
Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.
Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.
Comments: Obtained through trade.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**
Plant family: Poaceae English name: reedgrass, "common reed"
Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and
fruits in a feathery plume.
Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.
Plant parts used: shoots, upright stems, sap, leaves
Use category: Food, Technology, Medicine, Cosmetic, Confection
Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe
stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant
decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey"
collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and
on dress fringes.
Special preparation: Technology: the leaves were dried, soaked, and split for basketry.
Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.
Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.
Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**
Plant family: Pinaceae English name: ponderosa pine
Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in
cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off
branch; seeds winged.
Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate
elevations; widespread in western US and British Columbia.
Plant parts used: inner bark, pitch, wood, leaves, cones, seeds
Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection
Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer
bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and
for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for
twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets,
twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of
stored food and insulating storage pits, layered under drying cooked berries; as tinder, in
more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine:
stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage
decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes,
chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with
grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch);
to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies
(foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves
for incense or spread on floor of sweat house to combat witchcraft, cleansing agent;
smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin
conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones,
or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Taxus brevifolia Nuttall

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium* spp.**

Nez Perce name: **cemílk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly.

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorus.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Stern, T. 1998. Cayuse, Umatilla, and Walla Walla. Pp. 395-419 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: This chapter reviews the lifeways of these southern Plateau cultures. Several bands of Cayuse have names honoring plants e.g. "sunflower people," p. 395. The description of seasonal activities on p. 396-400 mentions several important plants (e.g. the Umatilla wawinam feast in February to celebrate the return of fresh greens) (*Lomatium grayi*). Other important ceremonies also celebrated plants: the feasts celebrating the first roots and first fruits, a girl's first independent root-digging and berry-picking, marriage trades, and funeral traditions. The author also discusses the importance of local groups' use rights to root grounds and fruit-gathering areas. Figure 14 shows tribal members working on wetland restoration; Figure 15 shows young girls with their digging sticks.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: The importance of plants in these cultures permeates this chapter, and they are closely related to Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

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Special interests: North American native people, southeast Asia

Methodology: Interviews, library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msít (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: tóko

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Stewart, H. 1984. Cedar: Tree of Life to the Northwest Coast Indians. Douglas & Ma. Vancouver, British Columbia 192 pp.

Summary: "Cedar: Tree of Life to the Northwest Coast Indians" is directed toward the popular audience and documents many uses of western redcedar and Alaska yellowcedar by indigenous Northwest Coastal people. Stewart describes traditions and technologies of collecting and processing cedar wood and bark. The book describes various products made from cedar and discusses the tree's spiritual significance. Photographs and very nice line drawings illustrate the book throughout.

Methodology: Field and library research, applying traditional techniques

Significance to Nez Perce ethnobotany: The Nez Percés used western redcedar in many of the same ways as coastal peoples.

Implications for future management of Nez Perce National Historical Park lands: Stewart's description of the many uses for cedar stresses the importance of preserving areas where cedar roots and bark can still be gathered, especially old-growth stands.

About the author: Stewart, Hilary

Author category: Art

Background: Vancouver, British Columbia; NDD St. Martin School of Art 1951

Special interests: Native American art and technology, ethnobotany

Methodology: Field and library research, applying traditional techniques

Context: popular interest

Specific Nez Perce plants discussed in this reference (1 total)

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Stoffle, R. W., D. B. Halmo, J. E. Olmsted, and M. J. Evans. 1990. Calculating the cultural significance of American Indian plants: Paiute and Shoshone ethnobotany at Yucca Mountain, Nevada. *American Anthropologist* 92: 416-432.

Summary: This 1990 study applies Turner's Index of Cultural Significance to ethnobotanical data from Yucca Mountain, Nevada. The authors conclude that Turner's method gives a true indication of relative importance of different plants in Southern Paiute culture. They also conclude that this method succeeds in synthesizing Native American and Western scientific perspectives.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Southern Paiute environments support different plant communities than Nez Perce environments, but several species are important in both areas. This study suggests that Turner's formula can be applied to diverse cultures.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Stoffle, Richard W.

Author category: Social science

Background: Associate Research Scientist, Institute for Social Research, University of Michigan

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (5 total)

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé ʔe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Striker, M. 1995. Sedentism and Resource Availability of the Coeur d'Alene at or Before European Contact. M.A. Thesis, University of Idaho. Moscow, ID. 104 pp.

Summary: Striker's study analyzes diversity of plant foods used by the Coeur d'Alene people as compared with plant foods of the Nez Perce and Spokane. The author equates high mobility with necessity to travel outside one's home territory in order to procure sufficient resources and concludes that the Coeur d'Alene were less mobile than the other two groups because of the rich resources offered by Lake Coeur d'Alene. However, this analysis does not discuss the rich resources of the Snake, Columbia, and Spokane Rivers or the value of the extensive camas meadows in Nez Perce and Spokane home territories. I believe it important also to consider the influence of food preferences, special "treats," innate desire to travel, and travel for non-food or only peripherally-food reasons such as social gatherings, all of which contribute to higher mobility.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Striker includes discussion of Nez Perce food plants and compares these with Coeur d'Alene and Spokane food plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Striker, Michael

Author category: Anthropology

Background: M.A. University of Idaho

Special interests:

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (37 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Lomatium triternatum (Pursh) Coulter & Rose

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups. Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).
Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium,
0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages,

poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtlá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mítip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower

infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé mítip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Strodt, C. E. 1965. An Analysis of the Non-Use of Edible Plants by Two Plateau Indian Tribes. BS thesis, Reed College. Portland, OR. 95 + pp.

Summary: This is an interesting study that analyzes use and non-use of “edible” plants by various native Plateau groups. Comparisons are made with plant use in the Great Basin. The author concludes that local availability at appropriate times and relative food value are not the only factors influencing use or non-use. Flavor, preservability, complementarity with other foods, and extended use (e.g. using serviceberries as a sweetener) are factors influenced by local culture. The paper focuses on two groups, the Thompson and the Warm Springs people, but conclusions are extended to the Plateau in general. The paper includes a few mistakes (e.g. that black lichen was not a favored food and that fireweed shoots were eaten only by the Thompson). Charts I and II present listings of plants not eaten by the two focus groups and comparisons with use by other groups, but these charts are difficult to interpret because of the way they are structured.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The thesis discusses 78 plants known to be important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

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Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (77 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Allium geyeri* S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Allium tolmiei* (Hooker) Baker ex S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Small strong-scented herbaceous perennials from bulbs; leaves broad, strap-like; flowers pink, in dense umbrella-shaped clusters; flowering stalks broad, flat, tending to lie on the ground.

Habitat: Dry soils at various elevations from southeast from Washington and western Idaho to Northeast California.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: raw or cooked.

Special preparation: Food: bulbs were dug during summer; dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites

(foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia, northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Celtis reticulata* Torrey**

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves Use category: Beverage, Medicine, Smoking
Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.
Special preparation: Beverage: the plants were boiled for a refreshing cold drink
Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**
Plant family: Portulacaceae English name: springbeauty
Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.
Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.
Plant parts used: tubers, leaves Use category: Food
Specific uses: Food: supplementary.
Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits
Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).
Other plants used in similar ways: Food: *Lomatium* spp.
Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**
Plant family: Cornaceae English name: red-osier dogwood
Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.
Habitat: Riparian areas and springs from low to high elevations; Western North America.
Plant parts used: inner bark, wood, stems, leaves, fruits
Use category: Food, Technology, Medicine, Smoking; Spiritualism
Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.
Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered
Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.
Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.
Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem

poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia

Plant parts used: root, fruits

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).
Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten. Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: **cí ci ta**

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable;

flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice).

Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Microseris nutans* (Geyer) Schultz-Bipontinus**

Nez Perce name:

Plant family: Asteraceae

English name: nodding microseris

Description: Small herbaceous perennial from fleshy taproot, with milky juice, leaves long and narrow, flowers in yellow heads, dandelion-like, fruits with narrow scales at the top.

Habitat: Moist open places from moderate to high elevations, western interior US and British Columbia.

Plant parts used: root

Use category: Food

Specific uses: Food: roots

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Loudon**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring

rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of

digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes inerme* Rydberg**

Nez Perce name: **pí lus**

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

***Ribes viscosissimum* Pursh**

Nez Perce name:

Plant family: Grossulariaceae

English name: sticky currant

Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.

Habitat: Wet or dry montane forests of inland western US and British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil

influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorus.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root

decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins).
Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear

sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé mítip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or

beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium scoparium* Leiberg**

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: ku ye

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.
Plant parts used: fruits Use category: Food, Technology
Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.
Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly
Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.
Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Vicia americana* Muhlenberg var. *truncata* (Nuttall) Brewer**

Nez Perce name:
Plant family: Fabaceae English name: American vetch
Description: Trailing herbaceous perennial with pinnately-compound leaves with tendrils at the tips, purple flowers in loose long-stalked heads; fruits small pods.
Habitat: Meadows and similar habitats in lowlands to moderate elevations; North America from Alaska and the Pacific Coast south to Mexico, east to Ontario, West Virginia, and Missouri.
Plant parts used: foliage, seeds Use category: Food, Spiritualism
Specific uses: Food: young foliage sometimes eaten cooked. Spiritualism: plant infusion as bathing solution in the sweathouse.
Special preparation: Food: foliage was boiled or baked

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: tá ko
Plant family: Asteraceae English name: mules ears
Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.
Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.
Plant parts used: young flower stalks, root, seeds Use category: Food, Medicine
Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).
Special preparation: Food: roots were pit-cooked to break down the inulin
Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.
Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Strong, E. 1959. Stone Age on the Columbia River. Binford & Mort. Portland, OR. 254 pp.

Summary: Strong's book is a general discussion of artifacts found along the Columbia River and of early explorers' observations concerning the native people of this area, aimed at the popular audience. Unfortunately the book in places seems to encourage amateur collecting. Strong does not directly mention the Nez Perce people but does talk about a few plants that were important to the Nez Percés. Pages 192-193 describe making tule mats with a photograph of a mat creaser (Figure 85); pages 91-93 discuss mat lodges and pit houses with a photograph of mat lodges (Fig. 26). Page 180 describes digging sticks, and gathering wapato is described on page 28 (photograph on page 17 (Figure 4)). Figure 27 is a photograph of a dugout canoe.

Methodology: Field excursions, library research

Significance to Nez Perce ethnobotany: The Nez Percés spent some time along the Columbia River, and their way of life was similar to that of the Columbia River people. Wapato is discussed in this book, and this was a desired trade item for the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Strong, Emory

Author category: Writer

Background: Skamania, WA

Special interests: Native peoples of the past

Methodology: Field excursions, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (5 total)

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Swanson, E. H., and A. Bryan. 1954. An archaeological survey of caves in Washington. *American Antiquity* 9(4): 387-389.

Summary: A survey of cave sites found in interior Washington caves and assessment of occupation, focusing on textiles (cordage, matting, basketry). Compares techniques and materials used in four areas of occupation designated by the authors (the Columbia Basin, the Yakima Valley, the Snake river area centering around Asotin, Washington, and area of the Columbia River centering around The Dalles, Oregon).

Methodology: Field research

Significance to Nez Perce ethnobotany: Swanson's survey includes mention of rockshelters in Nez Perce territory.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Swanson, Earl H.

Author category: Archaeology

Background: Professor of Anthropology, Idaho State University. Ph.D. University of Washington 1956; M.A. University of Arizona 1951; B.A. Carleton College 1948

Special interests: Environmental archaeology and ethnology

Methodology: Field research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for

insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g;

0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg

sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Swanson, E. H. 1962. The Emergence of Plateau Culture. Occasional Papers of the Idaho State College Museum 8. Pocatello, ID. 89 pp.

Summary: This paper presents the results of archaeological excavations in the Vantage area along the central Columbia River, Washington. Most of the sites included are caves/rockshelters, and, in addition to stone and bone, wood and textiles were recovered from the deposits. Chapter 5 interprets the materials found at these sites and other Columbia Plateau sites from the standpoint of cultural changes.

Methodology: Field, laboratory, and library research

Significance to Nez Perce ethnobotany: This paper is one of the few analyses of archaeological textiles on the Columbia Plateau. Materials used in the textiles recovered from sites along the Columbia River are to some degree the same as those from along the Snake River (tule mats, dogbane cordage) but there are also differences.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Swanson, Earl H.

Author category: Archaeology

Background: Professor of Anthropology, Idaho state University. Ph.D. University of Washington 1956; M.A. University of Arizona 1951; B.A. Carleton College 1948

Special interests: Environmental archaeology and ethnology

Methodology: Field, laboratory, and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (11 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp., *Symphoricarpos albus*

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudoregneria spicata* (Pursh) A. Love**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Zea mays* Linnaeus**

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes

Swayne, Z. L. 1990. Do Them No Harm! An Interpretation of the Lewis and Clark Expedition among the Nez Perce Indians. Legacy House, Inc. Orofino, ID. 348 pp.

Summary: Swayne's book is based on the journals of the Corps of Discovery and her own interviews with Nez Perce people. Sections of the book begin with a quote from the journals, followed by the author's interpretation of events described. The book is presented from the Nez Perce viewpoint and is a fictionalized account of historical events.

Methodology: Oral history, library research

Significance to Nez Perce ethnobotany: Ethnobotanical information in the book is based on information provided by Nez Perce people during the early 20th century and on Corps of Discovery journals.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Swayne, Zoa L.

Author category: Writer, Native American

Background: Taught public school. BS University of Idaho 1931

Special interests: Native American viewpoint

Methodology: Oral history, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (27 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Crataegus douglasii Lindley

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves

for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of

digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhus glabra* Linnaeus**

Nez Perce name: tilitilitit

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorus.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark

infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Vaccinium spp.

Nez Perce name: **cemílk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Sweet, M. 1962. Common Edible and Useful Plants of the West. Naturegraph Company. Healdsburg, CA. 64 pp.

Summary: This book presents a brief description of selected plants with line drawings and information on use by Indians and by Europeans.

Methodology: Library research

Significance to Nez Perce ethnobotany: Sweet's book includes 47 plants important to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Sweet, Muriel

Author category: "Useful" plants

Background: Taught by botanist William Bebb

Special interests: Natural History writing for children

Methodology: Library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (44 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied)

externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Alnus rhombifolia* Nuttall**

Nez Perce name:

Plant family: Betulaceae

English name: white alder

Description: Tree up to 60 ft tall, bark silvery-white, leaves serrate, fruits small dry, wingless, in small cones.

Habitat: Along permanent streams at low to high elevations of inland Northwest US, California, British Columbia, Baja California.

Plant parts used: bark, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: stimulating circulation, treating tuberculosis or lymphatic ailments (bark decoction); skin inflammations (leaves). Spiritualism: stems for incense

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood:

Cercocarpus ledifolius, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Aquilegia formosa Fischer ex DeCandolle

Nez Perce name: **yeqehste?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as

protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: Arne. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name: **heqé ʔe**

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cercocarpus ledifolius* Nuttall**

Nez Perce name: **póhos**

Plant family: Rosaceae

English name: curl-leaf mountain-mahogany

Description: Large shrub with gnarled growth form; leaves shiny dark green above, densely white-woolly beneath, narrow with margins rolled under; flowers without petals; fruits dry, with long feathery tail.

Habitat: Rocky hilltops and ridges in dry steppe, canyons, and ridges, in the foothills and mountains; inland western US.

Plant parts used: bark, wood

Use category: Technology, Medicine

Specific uses: Technology: wood and branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring; root nodules for rose-red color. Medicine: blood tonic, respiratory ailments, diphtheria, syphilis, eyewash (bark decoction); diarrhea (scraped bark infusion); heart ailments (bark or leaf decoction); burns (bark/wood powder or paste).

Other plants used in similar ways: Wood: *Cercocarpus montanus*, *Holodiscus discolor*, *Philadelphus lewisii*

***Cercocarpus montanus* Rafinesque var. *glaber* (S. Watson) Martin**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf mountain-mahogany

Description: Large shrub or small tree with gnarled growth form; leaves evergreen, broadest near the tip, shiny dark green above, pale beneath, margins toothed; flowers small, without petals, in axillary clusters; fruits small sharp achenes with plume-like persistent style.

Habitat: On rocky hilltops and ridges in dry steppe, canyons, and ridges; inland western North America from central Oregon south and east to the Rocky Mountains and central Mexico.

Plant parts used: wood

Use category: Technology, Medicine

Specific uses: Technology: wood/branches for digging sticks and digging stick handles, arrow foreshafts, showshoe frames, bowls, fish spears; inner bark for purple coloring. Medicine: respiratory problems (bark decoction).

Other plants used in similar ways: Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: Loci

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies

(stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Grindelia squarrosa* (Pursh) Dunal**

Nez Perce name:

Plant family: Asteraceae

English name: curly-cup gumplant

Description: Sticky biennial or short-lived perennial; leaves strap-shaped, usually with sharply toothed margins; flowers yellow, in a dense head.

Habitat: Dry open places at low to moderate elevations in the inland Northwest US.

Plant parts used: roots, leaves, flowers

Use category: Medicine

Specific uses: Medicine: tonic, kidney/bladder ailments, syphilis (plant infusion); liver ailments syphilis (root decoction/decoction); cough medicine, expectorant, stomachache, smallpox, measles, venereal disease (plant decoction); rheumatism, broken bones (poultice); sores (leaf infusion); blood tonic, coughs, poison-ivy, skin wash, snow blindness (flowering shoots)

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a *basal cluster*; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Mimulus guttatus* DeCandolle**

Nez Perce name:

Plant family: Scrophulariaceae

English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often withered dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a basal rosette; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers bright yellow, with broad thick petals, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups. Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots

rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine:

diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch).

Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry

baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles,

sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes,

story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach

ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with

grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore

throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism:

boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring

rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red

ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots

chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae English name: cascara
Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.
Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.
Plant parts used: bark, fruits Use category: Food, Medicine
Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).
Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.
Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**
Plant family: Anacardiaceae English name: smooth sumac
Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.
Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.
Plant parts used: roots, young shoots, leaves, fruits, seeds Use category: Food, Technology, Medicine, Smoking
Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits. Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture
Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.
Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:
Plant family: Brassicaceae English name: watercress
Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.
Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.
Plant parts used: whole plants, leaves Use category: Food, Medicine
Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)
Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.
Comments: peppery taste; introduced plant.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**
Plant family: Rosaceae English name: thimbleberry
Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.
Habitat: Forests, open areas, lowlands to high elevations; western North America.
Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh

elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetelwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Veratrum* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: **tá ko**

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Szczawinski, A. F., and N. J. Turner. 1980. Wild Green Vegetables of Canada. National Museum of Natural Sciences Canada's Edible Wild Plants Series No. 4 : 179 pp.

Summary: This is the fourth volume of the National Museum of Natural Sciences of Canada's series on wild food plants, published for the general audience. The book includes information on uses (food, medicine, technology) by North American indigenous peoples. The authors also present recipes and instructions for collection and preparation of the plants. The book has color photographs of many of the plant.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This book includes information on seven plants known to have been used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Szczawinski, Adam F.

Author category: Botany

Background: Curator of Botany Royal British Columbia Museum, Assistant Lecturer University of British Columbia. Ph.D. (Botany) University of British Columbia 1953; Instructor University Lwow; M.Ph. University Lwow (Poland) 1937

Special interests: Ethnobotany, PNW plant ecology, British Columbia forests, pollen

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (16 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a basal rosette, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parship

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?istis

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted.

The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

Sedum lanceolatum* Torrey var. *lanceolatum

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits upright follicles.

Habitat: Rocky or gravelly places, lowlands to high elevations; western and central North America.

Plant parts used: leaves

Use category: Water, Food, Medicine

Specific uses: Food: eaten when young. Beverage: emergency water source. Medicine: skin irritations, hemorrhoids (juice or poultice); childbirth recovery (stem/leaf/flower infusion); laxative (stem/leaf/flower infusion or fresh leaves chewed)

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

Veronica americana Schweinitz

Nez Perce name:

Plant family: Scrophulariaceae

English name: American brooklime

Description: Sprawling herbaceous perennial with glabrous short-stalked leaves in pairs; flowers small, pale blue, in racemes, fruits small, heart-shaped.

Habitat: In water of ditches, marshes, ponds, seeps, and quiet streams of lowlands to moderate elevations; North America.

Plant parts used: whole plant

Use category: Medicine

Specific uses: Medicine: emetic

Veronica anagallis-aquatica Linnaeus

Nez Perce name:

Plant family: Scrophulariaceae

English name: water pimpernel

Description: Sprawling herbaceous perennial with glabrous sessile leaves in pairs; flowers small, pale blue, in racemes, fruits small, heart-shaped.

Habitat: Aquatic; introduced from Eurasia and very widespread at low to moderate elevations in North and South America.

Plant parts used: stems/leaves

Use category: Food

Specific uses: Food: fresh greens

Viola spp.

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

Teit, J. A. 1909. The Shuswap. Memoir of the American Museum of Natural History II, Part VII: 443-813.

Summary: Teit describes the lifeways of the Shuswap people of the far northern Plateau culture area. His discussions of important plants are included in the various sections on Manufactures (pp. 473-491), House and Household (pp. 492-502), Clothing and Ornaments (pp. 502-512), Subsistence (pp. 513-530), Travel and Transportation; Trade (pp. 531-537), Games and Pastimes (pp. 564-566), and Medicine, Charms, Current Beliefs (pp. 618-620).

Methodology: Field and library research

Significance to Nez Perce ethnobotany: While the Shuswap occupied the northern Plateau and the Nez Perce were southern Plateau people, many plants were important in both cultures.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Teit, James A.

Author category: Ethnography, ethnobotany, ethnogeography

Background: Scottish immigrant married to a Thompson woman (Lucy); farmer, shopkeeper, guide, linguist, associate of Franz Boas;

Special interests: Northern Plateau Indians, interior British Columbia, Salish basketry

Methodology: Field and library research

Context: documentation of traditional customs

Specific Nez Perce plants discussed in this reference (61 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites

(foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweathouse dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a

cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia rediviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots

eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **tiítalam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten. Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root Use category: Food
Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.
Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled.
Nutritional value: Shoots 15 mg vitamin C per 100 g.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.
Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:
Plant family: Apiaceae English name: potato biscuitroot, "Indian-potato"
Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.
Plant parts used: tuberous root Use category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.
Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Nicotiana attenuata* Torrey**

Nez Perce name:
Plant family: Solanaceae English name: coyote tobacco
Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.
Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.
Plant parts used: leaves, flowers Use category: Medicine, Smoking
Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.
Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.
Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*istis*
Plant family: Cactaceae English name: prickly-pear cactus
Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.
Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.
Plant parts used: roots, pads, spines, fruits Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, *pipe stems*, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes cereum* Douglas**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa gymnocarpa Nuttall

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus parviflorus Nuttall

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery

(twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly.

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorus.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: yé ye

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Teit, J. A. 1930. Ethnobotany of the Thompson Indians of British Columbia. Edited by Elsie Steedman, based on field notes by James A. Teit. Bureau of American Ethnology 30th Annual Report 1908-1909: 33-102.

Summary: Teit compiled information on Thompson use of plants while he was living with them and married to one of them. This study considers the ways in which plants are culturally important. The plants are arranged by Use category and Thompson name, and for each plant there is a description of preparation and use.

Methodology: Field research

Significance to Nez Perce ethnobotany: Most of the plants included in this study were also important in Nez Perce culture. The specific use information is more thorough than in some studies of Nez Perce plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Teit, James A.

Author category: Ethnography, ethnobotany, ethnogeography

Background: Scottish immigrant married to a Thompson woman (Lucy); farmer, shopkeeper, guide, linguist, associate of Franz Boas;

Special interests: Northern Plateau Indians, interior British Columbia, Salish basketry

Methodology: Field research

Context: documentation of traditional customs

Specific Nez Perce plants discussed in this reference (108 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, *pipe stems*, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: roots, leaves, flowers

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium acuminatum* Hooker**

Nez Perce name:

Plant family: Liliaceae

English name: tapertip onion

Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.

Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehṭeʔí léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: seeds, leaves

Use category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits, seed fluff

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plant's milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea.

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Plant latex can cause severe nausea.

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilílx**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a *Basal rosette*, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or

fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Calypso bulbosa* (Linnaeus) Oakes**

Nez Perce name:

Plant family: Orchidaceae

English name: fairy slipper

Description: Herbaceous perennial from a bulb, with one succulent oval leaf and pink orchid flower with purple spots on the lip.

Habitat: Cool moist forests from the lowlands to moderate elevations in the mountains; western North America.

Plant parts used: flowers

Use category: Spiritualism

Specific uses: Spiritualism: Charm

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among

many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ceanothus sanguineus* Pursh**

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia.

Plant parts used: bark, wood, leaves

Use category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems/leaves/flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae English name: wavy thistle
Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.
Habitat: Open dry places on well-drained soils; western and central US, British Columbia.
Plant parts used: roots, stems Use category: Food
Specific uses: Food: roots.; young stems and greens eaten like asparagus.
Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.
Nutritional value: Inulin.
Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**
Plant family: Portulacaceae English name: springbeauty
Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.
Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.
Plant parts used: tubers, leaves Use category: Food
Specific uses: Food: supplementary.
Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.
Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).
Other plants used in similar ways: Food: *Lomatium* spp.
Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Clematis ligusticifolia Nuttall

Nez Perce name:
Plant family: Ranunculaceae English name: western clematis
Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.
Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.
Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff
Use category: Technology, Medicine, Cosmetic
Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).
Other plants used in similar ways: Cordage: *Lonicera ciliosa*

Cornus canadensis Linnaeus

Nez Perce name:
Plant family: Cornaceae English name: bunchberry
Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.
Habitat: Moist woods from low to medium elevations; western and central North America; Asia.
Plant parts used: fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tips; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tips; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorus.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Delphinium* spp.**

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection.
Cosmetic: plant infusion as hair conditioner.
Other plants used in similar ways: Coloring: *Vaccinium* spp

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled.

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: roots, leaves, young flowering stems

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath); body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with

grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a *Basal rosette* of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?*ayc* ?*ayc*

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy

blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Hieracium albiflorum* Hooker**

Nez Perce name:

Plant family: Asteraceae

English name: white hawkweed

Description: Hairy herbaceous perennial with milky juice; flowers white, in small dense heads.

Habitat: Moist to dryish slopes and open forests at low to moderate elevations in the northwest US and adjacent Canada.

Plant parts used: latex, foliage

Use category: Confection

Specific uses: Confection: milky sap.

Special preparation: Confection: the green plant or its coagulated sap was chewed.

Other plants used in similar ways: Chewing gum: *Asclepias speciosa*

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems/leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly “a single oz of dried root gave sufficient/nourishment for a full meal” (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and “planting” it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Love**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lithospermum ruderales* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia.

Plant parts used: root, fruits Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use category: Food

Specific uses:

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed;

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers).

Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection:

flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth

recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lupinus polyphyllus* Lindley**

Nez Perce name:

Plant family: Fabaceae

English name: largeleaf lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound, usually glabrous on upper surface, all attached to the stalk at its tip and radiating out like spokes; flowers blue or purple, pea-shaped, in long pyramid-shaped clusters.

Habitat: Moist to wet open or forested places at low to high elevations; western US and adjacent Canada.

Plant parts used: foliage

Use category: Medicine

Specific uses: Medicine: tonic (plant decoction).

Other plants used in similar ways: Medicine: *Lupinus* spp

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers *bright yellow, with broad thick petals*, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in

horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?**ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: shoots, upright stems, sap, leaves

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, *pipe stems*, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Loudon**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore

throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus tremuloides* Michaux**

Nez Perce name: nisá ·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Potentilla glandulosa* Lindley**

Nez Perce name:

Plant family: Rosaceae

English name: sticky cinquefoil

Description: Herbaceous glandular perennial with hairy pinnately-compound leaves; flowers yellow, with five petals, buttercup-like; fruits dry, in a dense cluster, resembling tiny beans.

Habitat: Moist to dry meadows, shrub steppe, open forests, lowlands to high elevations; western North America.

Plant parts used: whole plant, leaves

Use category: Medicine

Specific uses: Medicine: tonic(whole plant infusion); stimulant (whole plant infusion or weak leaf decoction)

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: tíms

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled

twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage:

leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or

scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**

Plant family: Ranunculaceae

English name: sagebrush buttercup

Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.

Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.

Plant parts used: whole plant, toxic

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice).

Spiritualism: decoction as body wash or for purification in sweathouse

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1897).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits/seeds

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtiqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation

Specific uses:

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: *Ribes* seeds are high in gamma-linoleic acid.

***Ribes viscosissimum* Pursh**

Nez Perce name:

Plant family: Grossulariaceae

English name: sticky currant

Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.

Habitat: Wet or dry montane forests of inland western US and British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mittip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and

lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent.

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around

cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever, chills (root decoction); to improve blood circulation (roots chewed and eaten); chest pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery

(twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 "petals"; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetelwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium* spp.**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly.

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Teit, J. A., and F. Boas. 1973. The Salishan Tribes of the Western Plateaus. An extract from 45th B.A.E. Annual Report, 1927-28. Facsimile Reproduction. The Shorey Book Store. Seattle, WA. 395 pp.

Summary: This book is a somewhat revised version of Boas and Teit's 1930 paper documenting their work with northern Columbia Plateau peoples during the early 1900's. It summarizes three cultural groups: the Coeur d'Alene, the Okanogan-Colville group, and the Flathead group. There is considerable information on the importance of plants in these cultures and comparison with other cultures including the Nez Perces. Figure 1 is an interesting drawing of Coeur d'Alene tule mat margins with the tule ends cut different lengths to form designs.

Methodology:

Significance to Nez Perce ethnobotany: The plant information in this book is extensive and there are many similarities with Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Teit, James A.

Author category: Ethnography, ethnobotany, ethnogeography

Background: Scottish immigrant married to a Thompson woman (Lucy); farmer, shopkeeper, guide, linguist, associate of Franz Boas;

Special interests: Northern Plateau Indians, interior British Columbia, Salish basketry

Methodology:

Context: documentation of traditional customs

Specific Nez Perce plants discussed in this reference (79 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides. Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice), constipation (leaves), tuberculosis/ respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: roots, leaves, flowers

Use category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever.

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting

(bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, haffing and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, haffing, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early

summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: wood, small roots, branches, leaves/catkins

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweat-house dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: ló las

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: qémes; stalks and leaves = qemesnim hehen; sundried loaves = é pine

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for

sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, woody stems, sap, bark, leaves, fruit fluff

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: *Lonicera ciliosa*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

Delphinium spp.

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection.

Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp

Erythronium grandiflorum Pursh

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems/leaves

Use category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Ledum groenlandicum Oeder

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

Letharia vulpina (Linnaeus) Hue

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled.

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lupinus polyphyllus* Lindley**

Nez Perce name:

Plant family: Fabaceae

English name: largeleaf lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound, usually glabrous on upper surface, all attached to the stalk at its tip and radiating out like spokes; flowers blue or purple, pea-shaped, in long pyramid-shaped clusters.

Habitat: Moist to wet open or forested places at low to high elevations; western US and adjacent Canada.

Plant parts used: foliage

Use category: Medicine

Specific uses: Medicine: tonic (plant decoction).

Other plants used in similar ways: Medicine: *Lupinus* spp

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*istis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin

conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young

shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine

(mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes cereum* Douglas**

Nez Perce name: kimmé

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

Ribes lacustre (Persoon) Poiret

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: *Ribes* seeds are high in gamma-linoleic acid.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: **mítip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower)

infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or

beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Theodoratus, R. J. 1989. Loss, transfer, and reintroduction in the use of wild plant foods in the Upper Skagit Valley. Northwest Anthropological Research Notes 23(1): 35-52.

Summary: Theodoratus discusses how indigenous plant use was changed by the coming of Euroamerican settlers to the Skagit Valley in Skagit County, Washington. He describes traditional subsistence activities in that area and changes resulting from the arrival of European foods and goods, including a transition from gathering to farming. Euroamerican settlers' attitudes toward the natural environment were very different from those of the indigenous people, and this added a great deal of misunderstanding. The paper also discusses the use of wild plants by the Euroamerican settlers and the current resurgence of interest in wild plant food.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The changes undergone by indigenous Plateau cultures were similar to those affecting cultures on the west side of the Cascade Mountains, and many of the same wild plants were used as food.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Theodoratus, Robert J.

Author category: Anthropology

Background: Department of Anthropology, Colorado State University; Assistant Professor of Anthropology Sacramento State College 1962-1966

Special interests: Ethnography

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (19 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated,

straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use Category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx;

branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Sambucus racemosa* Linnaeus var. *melanocarpa* (Gray) McMinn**

Nez Perce name: **mexsemé míttip**

Plant family: Caprifoliaceae

English name: black elderberry

Description: Medium shrub with coarse stems, pinnately compound leaves in pairs, dense pyramid-shaped clusters of creamy-white flowers, and black or purplish fruits.

Habitat: Moist places in the mountains; western North America.

Plant parts used: fruits, flowers, leaves

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: blood tonic (root decoction); diarrhea (root decoction or fruits eaten); colds, cough, tuberculosis, mild laxative, to induce sweat (flower infusion); bruises, sprains (leaf poultice).

Special preparation: Food: fruits were gathered during late July-August and eaten fresh or cooked. They were also dried for winter

Nutritional value: Fruits 1.1% protein, 5.6% fat, 14.6% carbohydrates. Per 100 g: 81-533 mg vitamin C, 30 RE vitamin A, 98-356 mg calcium, 1.1-7 mg iron, 1.3 mg sodium, 44-99 mg magnesium, 1 mg manganese, 84 mg phosphorous, 3 mg zinc.

Other plants used in similar ways: Food: *Sambucus cerulea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use Category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Thoms, A. V. 1987. The roots of prehistory in the Calispell Valley. The Big Smoke 1987: 1-19.

Summary: Thoms presents and interprets preliminary results of archaeological excavations at campsites in the Calispell Valley, Pend Oreille County, Washington. The Calispell Valley is well-known historically for sustaining extensive camas marshes and meadows and being a gathering place for various indigenous groups. Camas ovens are numerous in the sites excavated. Radiocarbon dating indicates that camas has been an important food item in the area for more than 5300 years. Thoms discusses the role of root foods in leading to a more settled way of life and describes the process of roasting camas. The paper also mentions Nez Perce villages along the Snake River. Page 9 shows diagrams of a camas oven reconstructed according to the evidence from the project's excavations.

Methodology: Excavation, field and library research

Significance to Nez Perce ethnobotany: The camas processing methods used by the Kalispel people are essentially the same as among the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Thoms, Alston V.

Author category: Archaeology

Background: Department of Anthropology, Texas A & M University

Special interests: Subsistence

Methodology: Excavation, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (22 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make then watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Crataegus douglasii Lindley

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

Juniperus communis Linnaeus

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis,

cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in

more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use Category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use Category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: mittip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. They were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Thoms, A. V. 1988. The roots of village life. Universe Spring 1988: 2-4.

Summary: This paper summarizes the results of the Calispell Valley Archaeological Project and what these excavations revealed about indigenous land use strategies in the inland Northwest. Discusses role of plant foods in the establishment of a more settled life with winter villages. Because salmon were absent from the Pend Oreille River, the Calispell site area provided a good opportunity to assess the role of camas. The presence in this area of many different seasonal village sites and many camas roasting ovens are evidence of the importance of plant foods.

Methodology: Excavation, field and library research

Significance to Nez Perce ethnobotany: The observations and conclusions are applicable to the Nez Perce people also except that the Nez Percés did have salmon in the rivers along which they lived.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Thoms, Alston V.

Author category: Archaeology

Background: Department of Anthropology, Texas A & M University

Special interests: Subsistence

Methodology: Excavation, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Tilford, G. L. 1997. Edible and Medicinal Plants of the West. Mountain Press Publishing Company. Missoula, MT. 239 pp.

Summary: "Edible and Medicinal Plants of the West" is an excellent compilation of information on medicinal and food uses of native and introduced plant species of western North America. For each plant Tilford includes a description and information on blooming time, habitat and range, as well as discussion of food and medicinal uses. Each plant is illustrated by one or two very nice color photographs. The book also includes a glossary.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This book includes 66 plants with documented importance in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Tilford, Gregory L.

Author category: Herbalism, natural science

Background: Travels and lectures on herbalism

Special interests: Medicinal use of wild plants; edible plants

Methodology: Field and library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (94 total)

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use Category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use Category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use Category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use Category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes

with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh.

They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use Category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Apocynum androsemifolium Linnaeus

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use Category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehṭeʔí léhṭ**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use Category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use Category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use Category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qíqétqíqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage

(rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use Category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use Category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use Category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use Category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use Category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use Category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorus.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use Category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: *Lonicera ciliosa*

***Conium maculatum* Linnaeus**

Nez Perce name:

Plant family: Apiaceae

English name: poison-hemlock

Description: Tall branched biennial plant from a taproot; stem hollow, purple-spotted; leaves finely dissected, fern-like; flowers small, white, in umbrella-shaped clusters.

Habitat: European weed widely established in moist disturbed areas, streamsides, and ditches at various elevations; North America.

Plant parts used: stems

Use Category: Highly toxic if eaten. Technology

Specific uses: Technology: stems reportedly sometimes used by some Plateau groups to make flutes.

Comments: Introduced plant.

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers

extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use Category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use Category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use Category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use Category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Galium boreale* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: northern bedstraw

Description: Herbaceous perennial from rhizomes, stems square; leaves narrow, in whorls of four; flowers pale yellow, with four petals; fruits round, in pairs.

Habitat: Circumboreal, in wet places.

Plant parts used: roots, seeds

Use Category: Food, Technology

Specific uses: Food: seeds. Technology: roots for red or yellow coloring agent.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Lithospermum rudemale*

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use Category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked. Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use Category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use Category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or

lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use Category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia.

Plant parts used: root, fruits

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium root)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use Category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use Category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk
Nutritional value: 7% protein.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.
Comments: Especially important source of vitamin C in spring.

***Mentha arvensis* Linnaeus**

Nez Perce name:
Plant family: Lamiaceae English name: field mint
Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.
Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.
Plant parts used: stems/leaves
Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.
Special preparation: Food: mint greens were sometimes warmed over a fire before eating
Nutritional value: Good source of calcium, iron, magnesium

***Mimulus guttatus* DeCandolle**

Nez Perce name:
Plant family: Scrophulariaceae English name: monkeyflower
Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often witherred dots or blotches; fruits delicate capsules.
Habitat: Wet places, lowlands to high mountains in western US.
Plant parts used: foliage Use Category: Food, Medicine, Spiritualism
Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.
Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.
Comments: Foliage has salty taste.

***Nepeta cataria* Linnaeus**

Nez Perce name:
Plant family: Lamiaceae English name: catnip
Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.
Habitat: Introduced from Europe, weedy, disturbed areas.
Plant parts used: stems, leaves, flowers Use Category: Medicine
Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)
Nutritional value: 83 mg vitamin C per 100g

***Oenothera villosa* Thunberg var. *strigosa* (Rydberg) W. Dietrich & Raven**

Nez Perce name:
Plant family: Onagraceae English name: common evening-primrose

Description: Biennial with *Basal rosette* and linear leaves along flowering stalk; flowers striking, delicate, lemon-yellow, with a narrow tubular base and four petals; fruit a capsule.

Habitat: Moist meadows and streambanks of lowlands to moderate elevations; inland western and central US.

Plant parts used: roots, tops

Use Category: Food, Medicine

Specific uses: Food: leaves. Medicine: bruises (plant poultice); hemorrhoids (root decoction externally or hot root poultice).

Special preparation: Food: the leaves were cooked.

Comments: Formerly called *Oenothera strigosa*.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*istis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use Category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix. Confection: root chewed

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: *cawitx*

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour

Nutritional value: Rich in vitamin C

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use Category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.

Plant parts used: whole plants, leaves

Use Category: Food, Medicine

Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)

Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.

Comments: peppery taste; introduced plant.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology:

inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles;

leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots

to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark

or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Percés preferred to collect thimbleberries at higher elevations.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use Category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use Category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: miftip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

Sedum lanceolatum* Torrey var. *lanceolatum

Nez Perce name:

Plant family: Crassulaceae

English name: stoncrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits upright follicles.

Habitat: Rocky or gravelly places, lowlands to high elevations; western and central North America.

Plant parts used: leaves

Use Category: Water, Food, Medicine

Specific uses: Food: eaten when young. Beverage: emergency water source. Medicine: skin irritations, hemorrhoids (juice or poultice); childbirth recovery (stem/leaf/flower infusion); laxative (stem/leaf/flower infusion or fresh leaves chewed)

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).

Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.

Other plants used in similar ways: Food: *Shepherdia canadensis*.

Comments: Best taste when gathered after frost.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use Category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use Category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use Category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).

Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Solidago canadensis* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: goldenrod

Description: Tall unbranched herbaceous perennial in clumps from rhizomes; leaves alternate, long and narrowly lance-shaped, margins sharply toothed and tips long pointed; flowers golden-yellow, in dense heads in branched clusters; fruits tiny, dry, with fluffy hairs.

Habitat: Moist places at low to high elevations; transcontinental North America.

Plant parts used: leaves, seeds

Use Category: Food, Medicine, Toys

Specific uses: Food: leaves for cooked greens; seeds to thicken soups. Beverage: dried flowers

for tea. Technology: toy whips. Medicine: respiratory problems, diuretic, or applied externally

to stop bleeding (leaf infusion); influenza, diarrhea (flower infusion/decoction); sleeplessness,

diarrhea, or excessive crying in babies (bathing in shoot decoction); fever in children (shoot infusion).

Special preparation: Medicine: leaves were dried and powdered.

Comments: Some people are allergic to goldenrod pollen.

***Spiraea betulifolia* Pallas**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf spiraea

Description: Tall shrub with ovate leaves; flowers white or cream-colored, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Woods or open hillsides, wet or dry, from sea level to high elevations; inland northern and central US and adjacent Canada east to Saskatchewan, South Dakota, and Wyoming.

Plant parts used: leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: leaves for tea. Medicine: stomach ailments (leaf infusion, whole plant

infusion, or root/leaf decoction); inflammation, fever, colds (leaf infusion); colds, poor

kidneys, ruptures, pain relief (e.g. menstrual pain, abdominal pain) (branch infusion);

diarrhea (root/leaf decoction); venereal disease (leaf infusion or leaf/branch decoction)

***Spiraea densiflora* Nuttall**

Nez Perce name:

Plant family: Rosaceae

English name: subalpine spiraea

Description: Small to medium shrub with ovate leaves; flowers purple or pink, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Moist places in the mountains, sometimes on open rocky slopes, from 2000 to 11,000 feet; Northwest U.S., California, and British Columbia.

Plant parts used: leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: leaves for tea

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use Category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Tragopogon dubius* Scopoli**

Nez Perce name:

Plant family: Asteraceae

English name: goatsbeard, oyster plant

Description: Biennial from a fleshy taproot, with milky sap and long pointed grass-like leaves; flowers yellow, in a dense head; fruits dry, with a long-stalked feathery plum on top.

Habitat: Introduced from Eurasia; weedy in wet to dry habitats at low to high elevations.

Plant parts used: root, seed fluff

Use Category: Food, Technology, Confection

Specific uses: Food: roots. Technology: seed fluff to stuff pillows. Confection: milky sap chewed.

Special preparation: Confection: for chewing, stems were broken off at the base. The milky sap was allowed to dry and rolled into a ball

Nutritional value: Roots 2.9% protein, 0.6% fat, 18% carbohydrates. Per 100 g: 11 mg vitamin C, 47 mg calcium, 1.5 mg iron, 380 mg potassium, 66 mg phosphorus.

Comments: Roots are rather bitter and probably not a favored food.

***Trifolium pratense* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: red clover

Description: Herbaceous perennial from a taproot; leaves with three leaflets; flowers pink to purple, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread at low to high elevations.

Plant parts used: flower heads

Use Category: Medicine

Specific uses: Food: flower heads eaten raw or cooked. Medicine: treating stomach cancer (flower head infusion)

***Typha angustifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: narrowleaf cattail

Description: Tall narrow herbaceous perennial from thick rhizomes; leaves long, thick, grasslike; flowers very small, in dense spikes, female portion below male portion of spike on same stalk, with a section of bare stalk between them; seeds tiny, with fluffy hairs.

Habitat: In shallow quiet water at a variety of elevations; eastern and central US and central California; introduced in the Northwest US.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes eaten fresh or cooked; pollen used in flour. Technology: leaves for matting, cordage, basketry; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses, diapers. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds (seed fluff).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Other plants used in similar ways: Matting: *Typha latifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium globulare* Rydberg**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: globe huckleberry

Description: Medium shrub with waxy-white ovate leaves rounded at the tips, urn-shaped pinkish or white flowers, and purple-blue berries.

Habitat: Mountain slopes at low to high elevations; inland Pacific Northwest US.

Plant parts used: roots, stems, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits (highly valued). Medicine: heart ailments, arthritis, rheumatism (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: One of the two major berries collected by the Nez Perce. The habitat was sometimes burned to increase berry production. The Nez Perces preferred to collect these berries in the subalpine fir zone.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Perces. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use Category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use Category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use Category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Viola orbiculata* Geyer ex Holzinger**

Nez Perce name:

Plant family: Violaceae

English name: darkwoods violet

Description: Herbaceous perennial; leaves round with cordate base; flowers yellow; fruits capsules that open explosively.

Habitat: Streamsides and other moist places, low-moderate to high elevations; from British Columbia south to northern Oregon and east to Idaho and Montana.

Plant parts used: roots, leaves, flowers

Use Category: Medicine

Specific uses: Food: flowers. Medicine: influenza, colds, fevers, diuretic, expectorant, laxative, emetic (plant infusion); mumps (plant poultice)

***Viola* spp.**

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use Category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use Category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use Category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Timbrook, J. 1982. Use of wild cherry pits as food by the California Indians. Journal of Ethnobiology 2(2): 162-176.

Summary: This paper discusses use of *Prunus* fruits by indigenous people in California. The paper is interesting because it details the processing methods used to detoxify cherry pits by breaking down the cyanogenic glycoside. Drying, leaching, grinding, and cooking effectively remove free cyanide. One earlier study indicated that some kinds of *Prunus* seeds have 33% protein and 43% oil by dry weight, very high levels. Processing techniques may reduce these levels but cherry pits are still a very good source of protein and oil. California groups used cherry foods as gifts as well as trade items, and cherry foods were important in ceremonies. The author concludes that cherry pits were traditionally important as a source of food, wealth, and spiritual power as well as a focus for social interaction.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Timbrook's analysis includes *Prunus emarginata* and *P. virginiana*, which were eaten by the Nez Perce people. It would be interesting to explore whether cherry pits were important in traditional Nez Perce culture in the other ways discussed in the paper.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Timbrook, Jan

Author category: Ethnobotany

Background: Senior Associate Curator, Anthropology, Santa Barbara Museum of Natural History, Santa Barbara, CA; MA.

Special Interests: Chumash people

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (2 total)

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks" in women.

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

Titone, J. 1999. Wisdom for the ages. The Spokesman-Review December 27, 1999: A1, A5.

Summary: Barbara Aripa is chair of the Cultural Resources Board, Colville Confederated Tribes, Nespelem, WA, and is also employed by the Environmental Health Department. This article expresses Aripa's philosophy and her desire to preserve Native American cultural heritage.

Methodology: Interview

Significance to Nez Perce ethnobotany: Four important native plants are mentioned in this article.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Titone, Julie

Author category: Journalism

Background: Staff Writer, The Spokesman-Review

Special interests:

Methodology: Interview

Context: popular interest

Specific Nez Perce plants discussed in this reference (3 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Trafzer, C. E., and R. D. Scheuerman. 1986. Renegade Tribe: The Palouse Indians and the Invasion of the Inland Pacific Northwest. Washington State University Press. Pullman, Washington. 224 pp.

Summary: This book is a historical review of the Euroamerican contact period in Palouse territory, beginning with the arrival of the Lewis & Clark party. It focuses on the battles between 1848 and 1877. Chapter 1 includes a review of knowledge of Palouse ethnobotany, with information on digging and processing of camas.

Methodology: Library research, oral history

Significance to Nez Perce ethnobotany: The Palouse and the Nez Perce peoples are closely related and culturally similar.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Trafzer, Clifford E.

Author category: History

Background: Professor, American Indian Studies, San Diego State University; Associate Professor Washington State University; Museum Curator Arizona Historical Society. Ph.D. Oklahoma State University 1973; B.A. Northern Arizona University 1971

Special interests: American Indian history

Methodology: Library research, oral history

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (14 total)

Allium spp.

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: From sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use Category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or pit roasted.

For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently

and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parship

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streambanks in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use Category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cou was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cou was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use Category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú lx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use Category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use Category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Trafzer, C. E. 1992. The Nez Perce. Chelsea House Publishers. New York. 112 pp.

Summary: This book is a review of Nez Perce history beginning with their first contact with the Corps of Discovery in 1805. Pages 13-14 describe this first direct Euroamerican contact. This was William Clark's advance party from the Corps of Discovery, and the Nez Perces gave them food including camas. On page 15 the book describes Twisted Hairs use of charcoal to draw a map, and the use of western redcedar to make dugout canoes. Also mentioned are the Nez Perce designation of seasons by the stages of plant growth and dormancy, and the importance of root-gathering areas such as the Camas Prairie. Page 51 includes a photo of a woman's saddle carved from cottonwood.

Methodology: Library research, oral history

Significance to Nez Perce ethnobotany: Trafzer's book is primarily historical; the importance of plants in Nez Perce culture is mentioned only in general terms.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Trafzer, Clifford E.

Author category: History

Background: Professor, American Indian Studies, San Diego State University; Associate Professor Washington State University; Museum Curator Arizona Historical Society. Ph.D. Oklahoma State University 1973; B.A. Northern Arizona University 1971

Special interests: American Indian history

Methodology: Library research, oral history

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (5 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lomatium* spp.**

Nez Perce name:

Plant family: Apiaceae

English name: lomatium, bitterroot, desert-parsley

Description: Herbaceous perennials with dissected leaves, small flowers in dense round clusters that are on stalks in umbrella-shaped cluster; fruits flat, in pairs.

Habitat: Dry and mesic areas of western North America.

Plant parts used: roots

Use Category: Food.

Special preparation: Food: roots were dug in spring during flowering, peeled, and eaten fresh, pit-steamed, or boiled. For winter they were mashed, formed into cakes or loaves, and dried. Sometimes the roots or cakes were strung on a cord to be hung from the saddle during travels.

Comments: Digging roots was one of the few times the earth was disturbed.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive;

leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Tuba, J., G. L.K. Hunter, and L. L. Kennedy. 1944. On sources of vitamin C II. Alberta native fruits. Canadian Journal of Research 22(2): 33-37.

Summary: This paper summarizes one of the wartime studies aimed toward self-sufficiency in vitamin C. It surveys vitamin C content of native Alberta fruits compared with commercial fruits. One interesting conclusion was that vitamin C content of fruits declines with advanced maturity. Table 1 details the results of the study.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The study includes 11 plants known to have been used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Tuba, Jules

Author category: Biochemistry

Background: Emeritus Associate Professor, University of Alberta. Ph.D. University of Toronto 1941; M.S. University of Saskatchewan 1937, B.Sc. 1932

Special interests: Food chemistry

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (12 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use Category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking:

inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rosa* spp.**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Urtica dioica* Linnaeus**

Nez Perce name: wetetwé tet

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Vaccinium spp.

Nez Perce name: **cemílk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use Category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Tuba, J., G. L.K. Hunter, and J. Kastelic. 1945. Approximate nutrient composition of dried rose hips. Canadian Journal of Research 23: 5-7.

Summary: Rose hips were analyzed chemically and proved to be the richest known source of vitamin C. They are also rich in vitamin A and several B vitamins and are 30-40% simple sugars.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: This information suggests the potential contributions of rose hips in the indigenous Nez Perce diet.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Tuba, Jules

Author category: Biochemistry

Background: Emeritus Associate Professor, University of Alberta. Ph.D. University of Toronto 1941; M.S. University of Saskatchewan 1937, B.Sc. 1932

Special interests: Food chemistry

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (1 total)

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Turnbaugh, S. P., and W. A. Turnbaugh. 1986. *Indian Baskets*. Schiffer Publishing, Ltd. West Chester, PA. 264 pp.

Summary: This richly illustrated book discusses North American Indian basketry styles and materials by region. The "Cascades and Plateau" section includes a general description Nez Perce basketry and materials. Photographs of Nez Perce baskets are on pages 39, 40, 41, and 171.

Methodology: Museum and library research

Significance to Nez Perce ethnobotany: This book discusses plant materials used in Nez Perce basketry.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turnbaugh, Sarah P.

Author category: Basketry

Background: Curator, Museum of Primitive Culture, Peace Dale, Rhode Island. M.A. Textiles, Clothing, and Related Arts, University of Rhode Island; B.A. Harvard University and Radcliffe College

Special interests: Native American basketry identification and conservation

Methodology: Museum and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (10 total)

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use Category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Rosaceae English name: antelope bitterbrush
Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.
Habitat: Moister shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.
Plant parts used: bark, roots, seeds Use Category: Technology, Medicine
Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

Salix spp.

Nez Perce name: táxs English name: willow
Plant family: Salicaceae
Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.
Habitat: Wet places; circumboreal.
Plant parts used: bark, wood, branches, green leaves Use Category: Technology, Medicine
Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).
Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sarcobatus vermiculatus (Hooker) Torrey

Nez Perce name:
Plant family: Chenopodiaceae English name: greasewood
Description: Spiny shrub with narrow cylindrical succulent leaves and pale stems; flowers and fruits in small dense spikes, fruits winged.
Habitat: Salty and alkaline places, flats, lowlands to the foothills; inland western US.
Plant parts used: spines, stems or bark, young shoots Use Category: Food, Technology
Specific uses: Food: young shoots for spring greens. Technology: twigs for awls, piercing arrow points; stems or bark occasionally used in basketry. Medicine: toothache (burned roots)

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: yé ye English name: beargrass
Plant family: Liliaceae
Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.
Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.
Plant parts used: leaves Use Category: Technology
Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.
Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).
Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use Category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Turner, N. J. 1974. Plant taxonomic systems and ethnobotany of three contemporary Indian groups of the Pacific Northwest (Haida, Bella Coola, and Lillooet). Syesis 7(Supplement 1): 1-104.

Summary: Turner's paper compares plant classification systems among three British Columbia indigenous groups. One of these groups, the Lillooet, is considered a northern Plateau culture. Turner finds that all three groups have about 150 generic-level plant names, and over half of these correspond one-to-one with botanical species. She also concludes that there is a positive correlation between the specificity of a plant name and the cultural significance of the plant. The frontispiece of the book shows photographs of three culturally-important plants; all three of these were also important in Nez Perce culture.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: Indigenous systems of plant naming and classification reflect importance of plants in the culture. This paper includes many plants important to Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

Background: Professor of Environmental Studies, University of Victoria, Research Affiliate, Royal British Columbia Museum; Adjunct Professor University of British Columbia, Vancouver. Ph.D. University of California, Berkeley; B.Sc. University of Victoria Canada

Special interests: Traditional plant uses

Methodology: Interviews, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (102 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, *pipe stems*, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use Category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes,

sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use Category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Alnus incana* (Linnaeus) Moench**

Nez Perce name: wí tx

Plant family: Betulaceae

English name: mountain alder

Description: Large shrub with leathery oval toothed leaves; flowers and fruits in catkins; the female catkins appear to be tiny cones.

Habitat: Streamsides and other wet areas, especially where gravelly, at low to high elevations in montane western North America.

Plant parts used: bark, branches, leaves

Use Category: Technology, Medicine

Specific uses: Technology: bark to smoke meat, bark decoction for red, red-brown, orange, or yellow coloring agent; branches/leaves to separate layers of camas bulbs in pit ovens; wood for fuel. Medicine: tuberculosis (bark infusion).

Special preparation: Bark boiled for coloring, infused for medicine.

Other plants used in similar ways: In pit ovens: "grass," *Medicago sativa*; for coloring: *Berberis aquifolium* var. *repens*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use Category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Aquilegia formosa Fischer ex DeCandolle

Nez Perce name: **yeqhte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use Category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use Category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf

decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Aster conspicuous* Lindley**

Nez Perce name:

Plant family: Asteraceae

English name: showy aster

Description: Herbaceous perennial from rhizomes; leaves large, ovate, sharply toothed, thick and firm; flowers in dense heads, rays blue to purple.

Habitat: Open woods in the foothills to moderate elevations in the mountains; boreal western North America south to northern Wyoming.

Plant parts used: roots, leaves

Use Category: Medicine

Specific uses: Medicine: Skin problems, venereal disease (root infusion)); boils (leaf poultice); hemorrhoids (root infusion externally or leaf poultice); toothache (roots).

Special preparation: Medicine: plants were brewed for an infusion

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect

bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Betula occidentalis* Hooker**

Nez Perce name: **heslíps**

Plant family: Betulaceae

English name: water birch

Description: Small tree with shiny-bronze bark; twigs glandular, with oval toothed leaves; flowers and fruits in catkins; seeds small, winged.

Habitat: Moist forests and wet areas, in the inland Northwest along streamsides, seepy slopes, and springs; western North America.

Plant parts used: small roots, wood, branches, leaves, catkins

Use Category: Beverage, Technology, Medicine

Specific uses: Beverage: Sap. Technology: bark in basketry, canoes, cradles, or as brown coloring agent; wood for mortars, bowls, fuel; branches for sweat-house dome. Medicine: roots for blood purification, sore throat, chest ailments, stomach ache; sap from hollowed out cavities for beverage; inner bark tea for colds, coughs.

Special preparation: Beverage: to collect the sap a cavity was hollowed out in the trunk. Medicine: roots were cut up and boiled

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorus.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus* spp.**

Nez Perce name: ló las

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Carex* spp.**

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use Category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use Category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use Category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use Category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use Category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: *Lonicera ciliosa*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use Category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum ruderale*

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use Category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use Category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones Use Category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima* myrsinites); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use Category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder). Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use Category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)
Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use Category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisiimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.
Plant parts used: wood, stems and leaves Use Category: Technology, Medicine
Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).
Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.
Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.
Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

***Juniperus communis* Linnaeus**

Nez Perce name:
Plant family: Cupressaceae English name: common juniper
Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.
Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.
Plant parts used: cones Use Category: Beverage, Medicine, Spiritualism
Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.
Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**
Plant family: Cupressaceae English name: Utah juniper
Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.
Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.
Plant parts used: foliage, cones Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, o relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use Category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhoea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use Category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae English name: potato biscuitroot, "Indian-potato"
Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.
Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.
Plant parts used: tuberous root Use Category: Food, Technology, Medicine
Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).
Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade
Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.
Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*.
Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:
Plant family: Caprifoliaceae English name: black twinberry
Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.
Habitat: Moist to wet spots at low to high elevations in western North America.
Plant parts used: bark, stems/leaves, fruits Use Category: Food, Technology, Medicine
Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).
Special preparation: Food: fruits were dried and stored for winter use

***Mentha arvensis* Linnaeus**

Nez Perce name:
Plant family: Lamiaceae English name: field mint
Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.
Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.
Plant parts used: stems/leaves Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.
Special preparation: Food: mint greens were sometimes warmed over a fire before eating
Nutritional value: Good source of calcium, iron, magnesium

***Mimulus guttatus* DeCandolle**

Nez Perce name:
Plant family: Scrophulariaceae English name: monkeyflower
Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often witherred dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use Category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers *bright yellow, with broad thick petals*, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use Category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use Category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use Category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use Category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use Category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use Category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: sé ysey

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: lá qa; inner bark = cuké ymit

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for

twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits Use Category: Food, Technology, Medicine, Cosmetic
Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."
Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained
Nutritional value: Fruits 30 mg vitamin C per 100g.
Other plants used in similar ways: Food: *Prunus emarginata*.
Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps
Plant family: Pinaceae English name: Douglas-fir
Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.
Habitat: Mesic to dry forests, lowlands to high elevations; western North America.
Plant parts used: branches, boughs, decayed wood
Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.
Special preparation: Technology: for a canoe the trunk was burned out and shaped
Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.
Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use Category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **títítítít**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use Category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes lacustre* (Persoon) Poirét**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae English name: swamp black gooseberry
Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.
Habitat: Moist forests and streambanks in montane western and central North America.
Plant parts used: roots, bark, stems, berries Use Category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)
Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.
Other plants used in similar ways: Food: *Ribes* spp

***Ribes viscosissimum* Pursh**

Nez Perce name:
Plant family: Grossulariaceae English name: sticky currant
Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.
Habitat: Wet or dry montane forests of inland western US and British Columbia.
Plant parts used: fruits Use Category: Food
Specific uses: Food: fruits.
Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.
Other plants used in similar ways: Food: *Ribes* spp

***Rosa nutkana* Presl**

Nez Perce name: tá msas
Plant family: Rosaceae English name: wild rose
Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."
Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.
Plant parts used: wood, stems/leaves, flowers, fruits
Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic
Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.
Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled
Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.
Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.
Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus parviflorus Nuttall

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use Category: Food

Specific uses: Food: young shoots for spring greens; fruits

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use Category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use Category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use Category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix scouleriana* Barratt**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead

stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use Category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or

beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use Category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use Category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use Category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Streptopus roseus* Michaux**

Nez Perce name:

Plant family: Liliaceae

English name: twisted-stalk

Description: Herbaceous perennial from rhizomes; leaves ovate, parallel-veined, shiny, bases clasping the stem; flowers white, yellowish, or rose, sometimes streaked or spotted; fruits red berries.

Habitat: Streambanks, moist woods, usually above 3000 ft. elevations; western boreal North America.

Plant parts used: fruits

Use Category: Food, Medicine

Specific uses: Food: fruits eaten but not a favorite food. Medicine: tonic, stomach ailments (plant infusion); internal pains (rhizome decoction). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use Category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh

plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Veratrum* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use Category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

Viola spp.

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use Category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use Category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Turner, N. J. 1977. Economic importance of black tree lichen (*Bryoria fremontii*) to the Indians of western North America. *Economic Botany* 31: 461-470.

Summary: Turner describes this lichen and its ecology and lists some of the Northwest indigenous groups that used it. The paper details the various uses of the lichen, gathering and processing it, food value, and legend.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The paper specifically discusses Nez Perce gathering of the lichen, and the more general information on preparation and food value is applicable to the Nez Perce use of the plant.

Implications for future management of Nez Perce National Historical Park lands:

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Special interests: Traditional plant uses

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (4 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Lewisia rediviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens. Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Percés secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use Category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomati*ums.

Turner, N. J. 1979. Plants in British Columbia Indian Technology. British Columbia Provincial Museum Handbook 38. 271 pp.

Summary: Turner's landmark series on plant use by British Columbia First Nations presents detailed information on the importance of plants in First Nations cultures. This volume describes technological uses for native and introduced plant species. For each plant discussed Turner includes a photograph, description, information on habitat and distribution, and how the plant was used by indigenous groups. The book focuses on British Columbia but many of the plants were used similarly by other Northwest groups.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: The book is a detailed summary of plants important in Native technology; most of these plants were or are also important in Nez Perce technology.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

Background: Professor of Environmental Studies, University of Victoria, Research Affiliate, Royal British Columbia Museum; Adjunct Professor University of British Columbia, Vancouver. Ph.D. University of California, Berkeley; B.Sc. University of Victoria Canada

Special interests: Traditional plant uses

Methodology: Field and library research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (41 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, *pipe stems*, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows,

also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Balsamorhiza sagittata (Pursh) Nuttall

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as

insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cornus sericea Linnaeus var. sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use Category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Eleocharis palustris* (Linnaeus) Roemer & Schultes**

Nez Perce name:

Plant family: Cyperaceae

English name: field spikerush

Description: Herbaceous perennial rhizomatous sedge without leaf blades, flowers in a narrow spike.

Habitat: Riparian and other marshy areas; widespread in temperate and cold-temperate Northern Hemisphere.

Plant parts used: stems

Use Category: Technology

Specific uses: Technology: cordage, basketry, bedding/pillows, to sit on in sweathouse.

Special preparation: Technology: the stems were dried and soaked for cordage and baskets.

Other plants used in similar ways: Textiles: *Eleocharis rostellata*

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: **hisimseqe**

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use Category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but they are tiny dry capsules.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia.

Plant parts used: root, fruits

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use Category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, pipe stems, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use Category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, pipe stems, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles,

sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine:

stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of

digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage:

leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Rosa* spp.**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use Category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix* spp.**

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use Category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

***Sambucus cerulea* Rafinesque**

Nez Perce name: míttip

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use Category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia

(plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use Category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Turner, N. J., R. Bouchard, and D. I.D. Kennedy. 1980. Ethnobotany of the Okanogan-Colville Indians of British Columbia and Washington. Occasional Papers of the British Columbia Provincial Museum 21: 179 pp.

Summary: This book discusses plants used by the Okanogan-Colville people. The plants are organized by large groupings (lichens, fungi, conifers, monocots, dicots) and then alphabetically by family and genus. Turner presents detailed information on uses of each plant and includes photographs illustrating some of the plants and some of the preparation processes (e.g. collecting and preparing black tree lichen). She concludes with a general summary of plants in Okanogan-Colville culture.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: Many Nez Perce plants are included.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

Background: Professor of Environmental Studies, University of Victoria, Research Affiliate, Royal British Columbia Museum; Adjunct Professor University of British Columbia, Vancouver. Ph.D. University of California, Berkeley; B.Sc. University of Victoria Canada

Special interests: Traditional plant uses

Methodology: Field and library research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (152 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, *pipe stems*, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use Category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes, sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever
Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use Category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Agoseris glauca* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Asteraceae

English name: mountain-dandelion

Description: Herbaceous perennial with succulent taproot, plant with milky juice; leaves glaucous, linear or sometimes with narrow lateral lobes; flowers yellow in a single dense head, with rays and disc flowers; fruit an achene with a long narrow beak topped by a feathery tuft of bristles.

Habitat: Moist meadows to dry steppe at low to high elevations; widespread in western North America.

Plant parts used: whole plant, latex

Use Category: Medicine, Confection

Specific uses: Medicine: skin wash (plant infusion); poultice (milky sap); laxative (root infusion) removing warts (milky sap). Confection (milky sap chewed).

Special preparation: Confection: latex dried for chewing

***Allium geyeri* S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed.

Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use Category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqehte?í léht**

Plant family: Ranunculaceae

English name: columbine

Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.

Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.

Plant parts used: leaves, seeds

Use Category: Food, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).

Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arabis sparsiflora* Nuttall**

Nez Perce name:

Plant family: Brassicaceae

English name: sicklepod rockcress

Description: Herbaceous perennial or biennial with a taproot and a *Basal rosette* of leaves with star-shaped hairs; leaves along the stem smaller. Flowers small, with four white, pink, or purple petals; fruit long and slender, podlike.

Habitat: Widespread in a variety of habitats but mostly sagebrush or ponderosa pine forest, lowlands to moderate elevations; interior western North America.

Plant parts used: roots, shoots

Use Category: Medicine

Specific uses: Medicine: diarrhea, heartburn (roots chewed); contraceptive (plant); eyewash (whole plant infusion)

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing

(pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name:

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use Category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: qémqem

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use Category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites

(foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use Category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a *Basal rosette*, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use Category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.

Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use Category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ceanothus sanguineus* Pursh**

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia.

Plant parts used: bark, wood, leaves

Use Category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use Category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use Category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use Category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings,

especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Chrysothamnus nauseosus* (Pallas) Britton**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: rubber rabbitbrush

Description: Small to medium deciduous shrub with numerous narrow stems and linear gray leaves; flowers butter-yellow, in small heads, heads dense on plant; fruits small, dry, with feathery plume.

Habitat: Dry open places including sand dunes and lava flows, lowlands to moderate elevations of interior western and central US and southern Canada.

Plant parts used: twigs, leaves, flowers

Use Category: Medicine, Confection

Specific uses: Technology: branches for smoking hides; leaves for insect repellent; seed fluff for stuffing pillows and mattresses. Medicine: stomach cramps, diarrhea, colds, coughs, toothache, bladder ailments, venereal disease (stem/leaf infusion); sanitary napkins, especially after childbirth (leaves); tuberculosis (flower infusion). Confection: plant sap chewed

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use Category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use Category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use Category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use Category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: *Lonicera ciliosa*

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use Category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Crepis atrabarba* Heller**

Nez Perce name:

Plant family: Asteraceae

English name: slender hawkbeard

Description: Herbaceous perennial with milky sap, taprooted; leaves pinnately divided into long narrow segments; flowers small, yellow, in dense dandelion-like heads; fruits achenes with a tuft of bristles at the top.

Habitat: Sagebrush steppe, grasslands, and open ponderosa pine forests of lowlands to moderate elevations; interior western US and British Columbia.

Plant parts used: stems and leaves

Use Category: Medicine

Specific uses: Medicine: plant infusion for sweaty feet.

Special preparation: Medicine: plants were pounded and infused in hot water, and the cooled solution was used as a food bath

Cymopterus terebinthinus* (Hooker) Torrey & Gray var. *terebinthinus

Nez Perce name:

Plant family: Apiaceae

English name: turpentine cymopterus

Description: Short perennial from a taproot, stems and leaves spreading along surface to form rounded mound; leaves resinous-scented, shiny yellow-green, finely dissected; flowers small, yellow, in umbrella-shaped clusters; fruits in pairs, dry, with wavy wings.

Habitat: Sandy or rocky places including dunes and talus; lowlands to moderate elevations in interior Washington, Oregon, Idaho, and Montana;.

Plant parts used: root

Use Category: Medicine

Specific uses: Medicine: treating sores, colds.

Special preparation: Medicine: the roots were chewed.

Comments: Easily confused with lomatiums.

***Delphinium* spp.**

Nez Perce name:

Plant family: Ranunculaceae

English name: larkspur

Description: Perennial herbaceous plant with clustered thick roots; leaves palmately divided; flowers spurred, blue.

Habitat: Dry to moist soils at a variety of elevations.

Plant parts used: flowers

Use Category: Toxic if eaten. Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: bright blue coloring (flowers). Medicine: diarrhea, fainting spells, or frothy mouth in children (plant infusion). Spiritualism: charm to hold a man's affection. Cosmetic: plant infusion as hair conditioner.

Other plants used in similar ways: Coloring: *Vaccinium* spp

***Eleocharis palustris* (Linnaeus) Roemer & Schultes**

Nez Perce name:

Plant family: Cyperaceae

English name: field spikerush

Description: Herbaceous perennial rhizomatous sedge without leaf blades, flowers in a narrow spike.

Habitat: Riparian and other marshy areas; widespread in temperate and cold-temperate Northern Hemisphere.

Plant parts used: stems

Use Category: Technology

Specific uses: Technology: cordage, basketry, bedding/pillows, to sit on in sweathouse.

Special preparation: Technology: the stems were dried and soaked for cordage and baskets.

Other plants used in similar ways: Textiles: *Eleocharis rostellata*

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use Category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use Category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones

Use Category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima* myrsinites); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion)

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweat-house as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use Category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use Category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use Category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations

(salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a *Basal rosette* of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use Category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Heracleum lanatum* Michaux**

Nez Perce name: ?*ayc* ?*ayc*

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorus.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Hesperostipa comata* (Trinius & Ruprecht) Barkworth**

Nez Perce name:

Plant family: Poaceae

English name: needle-and-thread

Description: Herbaceous perennial cespitose grass.

Habitat: Dry grasslands, shrub-steppe, low to high elevations; western and central North America.

Plant parts used: stems and leaves

Use Category: Technology

Specific uses: Technology: grass mats.

Special preparation: Technology: bundles of stems used with other grasses as warps in matting.

Other plants used in similar ways: Matting: *Pseudoregneria spicata*, *Elymus elymoides*.

Comments: Formerly called *Stipa comata*.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use Category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Holidiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use Category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use Category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction

to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: **písq̄u**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use Category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed
Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use Category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat

lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage

or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root

decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root

infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers

white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use Category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia,

sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots

chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person

(root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in

mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking:

leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing

many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals;

fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia.

Plant parts used: root, fruits

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal

bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate

appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain,

bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green

leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern

Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use Category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use Category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use Category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use Category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: **péqiy**

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use Category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use Category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers).

Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lonicera utahensis* Watson**

Nez Perce name:

Plant family: Caprifoliaceae

English name: red twinberry

Description: Small to tall shrub with rounded oval leaves in pairs; flowers in pairs, pale yellow to white, with a short spur at the base and a tube flaring out to five petals; fruits paired red berries joined at the base.

Habitat: Moist spots in the mountains of western North America.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits were eaten fresh and sometimes used for an emergency source of water

***Lupinus polyphyllus* Lindley**

Nez Perce name:

Plant family: Fabaceae

English name: largeleaf lupine

Description: Herbaceous perennial from a taproot; leaves palmately compound, usually glabrous on upper surface, all attached to the stalk at its tip and radiating out like spokes; flowers blue or purple, pea-shaped, in long pyramid-shaped clusters.

Habitat: Moist to wet open or forested places at low to high elevations; western US and adjacent Canada.

Plant parts used: foliage

Use Category: Medicine

Specific uses: Medicine: tonic (plant decoction).

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lupinus sericeus* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: silky lupine

Description: Silky-hairy herbaceous perennial from a taproot; leaves with five narrow leaflets all attached to tip of stalk and radiating out like spokes; flowers blue or purple. pea-shaped, in long dense pyramid-shaped clusters; fruits pods.

Habitat: Dry grasslands, sagebrush stands, or open forests; low to moderate elevations; interior western US and adjacent Canada.

Plant parts used: foliage

Use Category: Technology, Medicine

Specific uses: Technology: bedding or floor covering in sweat lodge. Medicine: to stimulate urination.

Other plants used in similar ways: Medicine: *Lupinus* spp

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Medicago sativa* Linnaeus**

Nez Perce name: **?alpa?álpa**

Plant family: Fabaceae

English name: alfalfa

Description: Herbaceous perennial, leaves compound, with three oblong leaflets, flowers tiny, pea-like, purple (sometimes white, pink, or yellow), fruits tiny coiled pods.

Habitat: European species widely naturalized in moist-mesic places (cultivated).

Plant parts used: foliage

Use Category: Technology

Specific uses: Technology: plants to line pit-roasting ovens

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use Category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction)

Nutritional value: 83 mg vitamin C per 100g

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use Category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelman**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers *bright yellow, with broad thick petals*, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use Category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*ístis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use Category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix. Confection: root chewed

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use Category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: *cawitx*

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds Use Category: Food, Technology, Medicine
Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).
Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal
Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.
Other plants used in similar ways: Food: *Perideridia bolanderi*.
Comments: The third most important root food to the Nez Perces. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phalaris arundinacea* Linnaeus**

Nez Perce name:
Plant family: Poaceae English name: reed canary grass
Description: Aggressive tall perennial grass from spreading rhizomes; flowers in a dense branched cluster.
Habitat: Wet places, especially in deep fine-textured soil, at various elevations; North America and Eurasia, introduced in some areas.
Plant parts used: stems, leaves Use Category: Technology
Specific uses: Technology: split stems for imbrication on baskets.
Special preparation: Technology: stems were soaked in boiling water and dried in sun to bleach them. Dried stems were split and rehydrated for use. Some groups used the stems for matting

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**
Plant family: Hydrangeaceae English name: mock-orange, syringa
Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.
Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.
Plant parts used: wood, leaves, flowers Use Category: Technology, Medicine
Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).
Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.
Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Physocarpus malvaceus* (Greene) Kuntze**

Nez Perce name:
Plant family: Rosaceae English name: ninebark
Description: Tall shrub with alternate three-five lobed maple-shaped leaves; flowers white, in dense round clusters; fruits clustered dry capsules.
Habitat: Moderate elevations; northern inland western US and southern Canada.

Plant parts used: stems

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots. Medicine: twigs for emetic. Spiritualism: washing hunting equipment, especially arrows, for protection from spells, charm to inflict bad luck on enemies.

Special preparation: Food: roots were steam cooked

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use Category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore

throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch);

to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Potentilla gracilis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: slender cinquefoil

Description: Herbaceous perennial with hairy palmately-compound leaves with round-toothed margins; flowers yellow, with five petals, buttercup-like; fruits dry, in a dense cluster, resembling tiny beans.

Habitat: Moist meadows and open forests, lowlands to high elevations; western North America.

Plant parts used: roots, leaves

Use Category: Medicine

Specific uses: Medicine: blood tonic, diarrhea, aches/pains, gonorrhea, washing sores (root infusion); wounds (mashed leaf/root poultice with subalpine fir pitch).

Special preparation: Medicine: roots and leaves were dried and then brewed into tea.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use Category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: teqsté ʔs

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate

appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).
Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers
Nutritional value: 9% protein. Possibly carcinogenic.
Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Pterospora andromedea* Nuttall**

Nez Perce name:
Plant family: Ericaceae English name: pinedrops
Description: Tall saprophytic perennial without chlorophyll; stems unbranched, red-brown, sticky-glandular, up to one m tall with scalelike non-photosynthesizing leaves; flowers urn-shaped, nodding, in a long narrow cluster; fruits dry capsules.
Habitat: In deep humus of coniferous forests, especially ponderosa pine, low to high elevations; western US and Canada.
Plant parts used: whole plant Use Category: Technology, Medicine
Specific uses: Technology: with clematis for shampoo. Medicine: gonorrhea (root infusion); treating sore back in horses.
Special preparation: Horse medicine: roots were mashed and placed on the horse's back

***Purshia tridentata* (Pursh) DeCandolle**

Nez Perce name:
Plant family: Rosaceae English name: antelope bitterbrush
Description: Stiff shrub with rigid branchlets, leaves small, three-lobed at tip, white on lower surface; flowers abundant, small, with five yellow petals, very fragrant.
Habitat: Moist shrub-steppe or open forest, washes at various elevations; inland Western United States and British Columbia.
Plant parts used: bark, roots, seeds Use Category: Technology, Medicine
Specific uses: Technology: bark in basketry; wood for fuel (burns hot); boiled seeds for violet coloring. Medicine: tonic (leaf/twig decoction); lung ailments (root infusion); emetic (dry fruits mashed in cold water); internal bleeding (inner bark decoction); gonorrhea (inner bark, leaf, or root decoction); skin irritations (leaf poultice, plant decoction, or leaf powder)

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**
Plant family: Ranunculaceae English name: sagebrush buttercup
Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.
Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.
Plant parts used: whole plant, toxic Use Category: Technology, Medicine, Spiritualism
Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice).
Spiritualism: decoction as body wash or for purification in sweathouse

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**
Plant family: Rhamnaceae English name: cascara
Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.
Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.
Plant parts used: bark, fruits Use Category: Food, Medicine
Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use Category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamitiqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use Category: Contact causes skin irritation.

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.

Plant parts used: whole plants, leaves

Use Category: Food, Medicine

Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice)

Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.

Comments: peppery taste; introduced plant.

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use Category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor

wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use Category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Salix amygdaloides* (Andersson) Coville**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use Category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use Category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix scouleriana* Barratt**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Salix sitchensis* Sanson**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Sitka willow

Description: Deciduous large dioecious shrub with velvety twigs and leaves; flowers and fruits in catkins, stamen one per flower.

Habitat: Moist to wet places at low to high elevations; Pacific western North America.

Plant parts used: inner bark

Use Category: Food

Specific uses: Food: emergency food. Technology: firewood. Medicine: stomach ailments (branch infusion).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including

bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus microcarpus* Presl**

Nez Perce name:

Plant family: Cyperaceae

English name: sharpstem bulrush

Description: Tall herbaceous perennial with sharply triangular stems and leaves in three ranks; leaves one cm or more wide; flowers in dense clusters emerging from a whorl of leaflike bracts.

Habitat: Wet places from the lowlands to the mountains; western interior North America and east to the Atlantic Ocean.

Plant parts used: stems, leaves

Use Category: Technology

Specific uses: Technology: stem and leaves used to separate layers of foods in pit ovens; leaves used to weave berry and root baskets for light or short-term use

Sedum lanceolatum* Torrey var. *lanceolatum

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits upright follicles.

Habitat: Rocky or gravelly places, lowlands to high elevations; western and central North America.

Plant parts used: leaves

Use Category: Water, Food, Medicine

Specific uses: Food: eaten when young. Beverage: emergency water source. Medicine: skin irritations, hemorrhoids (juice or poultice); childbirth recovery (stem/leaf/flower infusion); laxative (stem/leaf/flower infusion or fresh leaves chewed)

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use Category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use Category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use Category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use Category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use Category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).

Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Solidago canadensis* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: goldenrod

Description: Tall unbranched herbaceous perennial in clumps from rhizomes; leaves alternate, long and narrowly lance-shaped, margins sharply toothed and tips long pointed; flowers golden-yellow, in dense heads in branched clusters; fruits tiny, dry, with fluffy hairs.

Habitat: Moist places at low to high elevations; transcontinental North America.

Plant parts used: leaves, seeds

Use Category: Food, Medicine, Toys

Specific uses: Food: leaves for cooked greens; seeds to thicken soups. Beverage: dried flowers for tea. Technology: toy whips. Medicine: respiratory problems, diuretic, or applied externally to stop bleeding (leaf infusion); influenza, diarrhea (flower infusion/decoction); sleeplessness, diarrhea, or excessive crying in babies (bathing in shoot decoction); fever in children (shoot infusion).

Special preparation: Medicine: leaves were dried and powdered.

Comments: Some people are allergic to goldenrod pollen.

***Spiraea betulifolia* Pallas**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf spiraea

Description: Tall shrub with ovate leaves; flowers white or cream-colored, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Woods or open hillsides, wet or dry, from sea level to high elevations; inland northern and central US and adjacent Canada east to Saskatchewan, South Dakota, and Wyoming.

Plant parts used: leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: leaves for tea. Medicine: stomach ailments (leaf infusion, whole plant infusion, or root/leaf decoction); inflammation, fever, colds (leaf infusion); colds, poor kidneys, ruptures, pain relief (e.g. menstrual pain, abdominal pain) (branch infusion); diarrhea (root/leaf decoction); venereal disease (leaf infusion or leaf/branch decoction)

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around

cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use Category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use Category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use Category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Triticum aestivum* Linnaeus**

Nez Perce name: **peqes**

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use Category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: what was gleaned from the fields and boiled until the kernels opened

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split
Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.
Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.
Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use Category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use Category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits Use Category: Food, Technology
Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.
Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly
Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.
Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Vicia americana* Muhlenberg var. *truncata* (Nuttall) Brewer**

Nez Perce name:
Plant family: Fabaceae English name: American vetch
Description: Trailing herbaceous perennial with pinnately-compound leaves with tendrils at the tips, purple flowers in loose long-stalked heads; fruits small pods.
Habitat: Meadows and similar habitats in lowlands to moderate elevations; North America from Alaska and the Pacific Coast south to Mexico, east to Ontario, West Virginia, and Missouri.
Plant parts used: foliage, seeds Use Category: Food, Spiritualism
Specific uses: Food: young foliage sometimes eaten cooked. Spiritualism: plant infusion as bathing solution in the sweathouse.
Special preparation: Food: foliage was boiled or baked

***Viola* spp.**

Nez Perce name:
Plant family: Violaceae English name: violets
Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.
Habitat: Meadows, woods, riparian areas; sea level to high mountains.
Plant parts used: leaves, flowers Use Category: Food
Specific uses: Food: leaves and flowers eaten fresh
Nutritional value: Flowers 150 mg vitamin C per 100 g

***Wyethia amplexicaulis* (Nuttall) Nuttall**

Nez Perce name: **tá ko**
Plant family: Asteraceae English name: mules ears
Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.
Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.
Plant parts used: young flower stalks, root, seeds Use Category: Food, Medicine
Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).
Special preparation: Food: roots were pit-cooked to break down the inulin
Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.
Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**
Plant family: Liliaceae English name: beargrass
Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use Category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use Category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Turner, N. J., and A. F. Szczawinski. 1984 (2nd printing). Wild Coffee and Tea Substitutes of Canada. National Museum of Natural Sciences, National Museums of Canada Edible Wild Plants of Canada No. 2 : 111 pp.

Summary: This book is Volume 2 of the National Museum of Canada's series on wild food plants published for the general audience. It includes information on indigenous uses of the plants for food, medicine, and technology. The authors discuss native plants and weeds used for tea and include recipes and instructions for collecting and preparing the plants. The book includes color photographs of many of the plants discussed.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: This book includes information on 16 plants known to have been used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

Background: Professor of Environmental Studies, University of Victoria, Research Affiliate, Royal British Columbia Museum; Adjunct Professor University of British Columbia, Vancouver. Ph.D. University of California, Berkeley; B.Sc. University of Victoria Canada

Special interests: Traditional plant uses

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (23 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern.

Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use Category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use Category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood

pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or

internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.
Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use Category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Picea engelmannii* Parry**

Nez Perce name: heslíps

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Thuja plicata Donn ex D. Don

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Trifolium pratense* Linnaeus**

Nez Perce name:

Plant family: Fabaceae

English name: red clover

Description: Herbaceous perennial from a taproot; leaves with three leaflets; flowers pink to purple, in a dense cluster; fruits small pods.

Habitat: Introduced from Europe, widespread at low to high elevations.

Plant parts used: flower heads

Use Category: Medicine

Specific uses: Food: flower heads eaten raw or cooked. Medicine: treating stomach cancer (flower head infusion)

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use Category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Turner, N. J., H. V. Kuhnlein, and K. N. Egger. 1987. The cottonwood mushroom (*Tricholoma populinum*): a food resource of the Interior Salish Indian peoples of British Columbia. *Canadian Journal of Botany* 65: 921-927.

Summary: This paper reviews the biology, gathering, preparation, use, and nutritional value of a mushroom eaten by many indigenous Northwest groups. The study focuses on Interior Salish of British Columbia.

Methodology: Field and library research, interviews, chemical analysis

Significance to Nez Perce ethnobotany: The Nez Percés ate this mushroom.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

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Special interests: Traditional plant uses

Methodology: Field and library research, interviews, chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood , shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use Category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

Turner, N. J. 1988. Ethnobotany of coniferous trees in Thompson and Lillooet Interior Salish of British Columbia. Economic Botany 42(2): 177-194.

Summary: This paper reviews use of conifers in Native Interior British Columbia for food, technology, and medicine. All conifers were of moderate to high cultural significance. Major coniferous foods were seeds of whitebark pine, *Pinus albicaulis* (and to a lesser extent, ponderosa pine, *P. ponderosa*), inner bark of ponderosa and lodgepole (*P. contorta*) pines, and "Douglas-fir sugar." Most conifers were used in many different ways.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: Most of the conifers used in interior British Columbia were also used by the Nez Perce.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

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Special interests: Traditional plant uses

Methodology: Field and library research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (15 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use Category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qáppqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken

bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing;

boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Turner, N. J. 1988. "The importance of a rose: " Evaluating the cultural significance of plants in Thompson and Lillooet Interior Salish. *American Anthropologist* 90: 272-290.

Summary: Turner's paper is an attempt to quantify evaluation of the importance of the cultural significance of any particular plant--the roles a specific plant has in a particular culture. The paper presents a formula for determining an "index of cultural significance." A number of factors are important in this evaluation, but a basic principle is that the more widely or intensively a plant is used or not used, the greater its importance. Turner also states that in general more important plants have shorter and simpler names. Figure 2 shows factors relating to cultural significance of plants. Tables 2 and 3 define categories for classifying intensity of and preference for plant use; Table 4 lists examples of the index of cultural significance applied to selected plants; Table 5 compares plant cultural significance to Thompson and Lillooet cultures.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The paper mentions 42 plants important in Nez Perce culture. The formula for determining cultural significance could be applied in studies of Nez Perce ethnobotany.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

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Special interests: Traditional plant uses

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (44 total)

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorus.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and

conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use Category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use Category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use Category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorous

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorus.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use Category: Food, Medicine, Spiritualism, Confection
Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.
Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)
Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.
Other plants used in similar ways: Food: *Fritillaria pudica*.
Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:
Plant family: Geraniaceae English name: sticky purple geranium
Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.
Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.
Plant parts used: roots, sap, leaves Use Category: Medicine, Spiritualism
Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.
Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Juniperus communis* Linnaeus**

Nez Perce name:
Plant family: Cupressaceae English name: common juniper
Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.
Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.
Plant parts used: cones Use Category: Beverage, Medicine, Spiritualism
Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.
Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**
Plant family: Cupressaceae English name: Utah juniper
Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.
Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.
Plant parts used: foliage, cones
Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Ledum groenlandicum Oeder

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried

bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use Category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use Category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use Category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus albicaulis* Engelm**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use Category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Loudon**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).

Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté q̄s**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted.

The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use Category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xta x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **toko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and

lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use Category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to

scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetelwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use Category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Xerophyllum tenax* (Pursh) Nuttall**

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use Category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Turner, N. J., and A.F. Szczawinski. 1988. **Edible Wild Fruits and Nuts of Canada. National Museum of Natural Sciences Canada's Edible Wild Plants Series No. 3. Fitzhenry & Whiteside, Markham, Ontario, Canada. 212 pp.**

Summary: This is the third volume in the national Museum of Canada's series on wild food plants published for the general audience. The book includes a discussion of what is a fruit and of fruit types. The authors present information on indigenous uses of these fruit plants for food, medicine, and technology and give recipes. The color photographs of fruit plants are very nice.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The book includes information on 18 plants known to have been used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

Background: Professor of Environmental Studies, University of Victoria, Research Affiliate, Royal British Columbia Museum; Adjunct Professor University of British Columbia, Vancouver. Ph.D. University of California, Berkeley; B.Sc. University of Victoria Canada

Special interests: Traditional plant uses

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (18 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp

problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture.
Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use Category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use Category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates.

Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers *bright yellow, with broad thick petals*, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use Category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Rhus glabra* Linnaeus**

Nez Perce name: **tíííííííííí**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use Category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

Ribes spp.

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus parviflorus Nuttall

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower

infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).

Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.

Other plants used in similar ways: Food: *Shepherdia canadensis*.

Comments: Best taste when gathered after frost.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

Turner, N. J., L. C. Thompson, M. T. Thompson, and A. Z. York. 1990. Thompson Ethnobotany: Knowledge and Usage of Plants by the Thompson Indians of British Columbia. Royal British Columbia Museum Memoir #3. Victoria, British Columbia. 335 pp.

Summary: This book is a classic in Northwest ethnobotany, thoroughly documenting plant use by the Thompson people as reported by Turner's Thompson consultants. Introductory material includes an excellent chapter on the role of plants in Thompson culture. The bulk of the book is an encyclopedia of plants important in Thompson culture, presenting detailed information on the use of each plant and black and white photographs for some plants. A series of tables lists plants by traditional Use category: foods (Table 2), poisonous or irritant plants (Table 3), technology (Table 4), medicine (Table 5), spiritualism (Tables 6-7).

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: Though Thompson territory includes different plant communities than Nez Perce territory, many of the same plants were used.

Implications for future management of Nez Perce National Historical Park lands:

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Special interests: Traditional plant uses

Methodology: Interviews, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (154 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; decayed wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: decaying wood, branches, boughs, cones

Use Category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; decayed wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Acer glabrum* Torrey var. *douglasii* (Hooker) Dippel**

Nez Perce name:

Plant family: Aceraceae

English name: Douglas maple or Rocky Mountain maple

Description: Large shrub with three-lobed leaves in pairs; flowers small, green, fruits dry, winged, in pairs that spiral down from the tree like helicopters.

Habitat: In the understory of coastal and inland Northwest mesic montane forests.

Plant parts used: wood, twigs, leaves

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: crushed leaves to spice stored meat. Technology: inner bark for cordage; wood and branches for dip net hoops, bows, arrow shafts, digging sticks, *pipe stems*, frames (snowshoe, drum, saddle, cradle, house, sweathouse), bows, spoons, tongs, tipi pegs, adz handles, screens for smoke drying racks, combs. Medicine: snakebite, healing from childbirth and stimulation of milk production (decoction of wood and bark). Spiritualism: wood/bark decoction to remedy sickness caused by exhalations from a dead body.

Special preparation: Technology: the wood was molded by heating and bending it.

***Achillea millefolium* Linnaeus**

Nez Perce name: **wapalwá pal**

Plant family: Asteraceae

English name: yarrow

Description: Strongly scented herbaceous perennial, often rhizomatous, leaves divided into feathery segments, flowers in small heads with white rays, heads in a flat-topped cluster.

Habitat: In moist mesic to dry open areas, lowlands to high elevations; widespread.

Plant parts used: leaves, flowers, roots

Use Category: Beverage, Medicine, Insect repellent

Specific uses: Beverage: tea. Medicine: tonic, digestive ailments (root infusion or whole plant decoction); colds (root infusion, whole plant decoction, flower infusion); influenza (flower infusion); tuberculosis, fever reduction, inducing sweating, circulatory ailments, stimulating energy, eyewash, skin ailments, snakebite, disinfecting (whole plant decoction); headache, venereal disease (root infusion); sciatica, broken bones, toothache (root); cuts, rashes,

sprains, bleeding, aching joints (leaf poultice); bladder ailments (flower infusion); as smudge to repel insects. Cosmetic: rubbed in armpits for deodorant.

Special preparation: medicine: the roots were mashed into a poultice or a decoction was made. Leaves were moistened or chewed for a leaf poultice. The entire plant was dried and ground into flour for aiding digestion or energy. Leaves were brewed into tea to treat fever

Nutritional value: Leaves 3.8% protein. Per 100 g: 225 mg calcium, 13.1 mg iron, 645 mg potassium, 53 mg magnesium, 4 mg manganese, 59 mg sodium, 76 mg phosphorous

***Adiantum pedatum* Linnaeus**

Nez Perce name:

Plant family: Polypodiaceae

English name: maidenhair fern

Description: Graceful fern with fan-shaped leaves having several divisions, each division lined with two rows of leaflets (pinnules), spores borne along pinnule margins.

Habitat: Moist temperate woods and streamsides; widespread in North America from low to high elevations.

Plant parts used: leafstalks

Use Category: Technology, Medicine

Specific uses: Technology: leafstalks for black design elements in basketry. Medicine: leaves sometimes chewed to stop internal bleeding

***Agoseris glauca* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Asteraceae

English name: mountain-dandelion

Description: Herbaceous perennial with succulent taproot, plant with milky juice; leaves glaucous, linear or sometimes with narrow lateral lobes; flowers yellow in a single dense head, with rays and disc flowers; fruit an achene with a long narrow beak topped by a feathery tuft of bristles.

Habitat: Moist meadows to dry steppe at low to high elevations; widespread in western North America.

Plant parts used: whole plant, latex

Use Category: Medicine, Confection

Specific uses: Medicine: skin wash (plant infusion); poultice (milky sap); laxative (root infusion) removing warts (milky sap). Confection (milky sap chewed).

Special preparation: Confection: latex dried for chewing

***Allium acuminatum* Hooker**

Nez Perce name:

Plant family: Liliaceae

English name: tapertip onion

Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.

Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Apocynum androsemifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use Category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds Use Category: Food, Technology, Medicine
Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).
Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.
Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Aquilegia formosa* Fischer ex DeCandolle**

Nez Perce name: **yeqeh-te?í léht**
Plant family: Ranunculaceae English name: columbine
Description: Tall herbaceous perennial with numerous slender stems; leaves compound, somewhat fern-like; flowers red and yellow, with five petals and a long spur from each petal.
Habitat: Wet places, usually semi-shaded to open, lowland to mid-montane; in the inland Northwest usually at springs, seeps, or wet areas in canyons; western to middle North America.
Plant parts used: leaves, seeds Use Category: Food, Medicine, Spiritualism, Smoking, Cosmetic
Specific uses: Food: early spring greens for potherb. Medicine: digestive ailments, dizziness (root decoction); increased stamina (roots smeared on legs); venereal disease (whole plant decoction). Spiritualism: Good luck/love charm (whole plant). Smoking: seeds in smoking mixtures. Cosmetic: Perfume, hair wash (plant infusion or mashed ripe seeds).
Special preparation: Cosmetic: the seeds were chewed and spit on body

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**
Plant family: Ericaceae English name: kinnickinick, bearberry
Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.
Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.
Plant parts used: leaves, berries Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic
Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.
Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.
Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried
Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name:

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use Category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use Category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asarum caudatum* Lindley**

Nez Perce name:

Plant family: Aristolochiaceae

English name: wild ginger

Description: Trailing herbaceous perennial with long rhizomes and long-stalked leathery heart-shaped leaves; flowers solitary, borne at ground level, with three long narrow-tipped brownish-purple or greenish "petals."

Habitat: Moist shady woods of the lowlands up to moderate elevations in the mountains; Pacific Northwest.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine, Cosmetic

Specific uses: Food: flavoring. Technology: infant bedding, scent. Medicine: digestive ailments (rhizome decoction); vasodilatation; toothache, boils (poultice of fresh warmed leaves), sores (leaf decoction). Cosmetic: perfume

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use Category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Too much plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early

summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes
Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein.
Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.
Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use Category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Carex* spp.**

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems, leaves, flowers

Use Category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use Category: Food

Specific uses: Food: potherb, flour from seeds

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use Category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use Category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use Category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use Category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use Category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion)

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Clematis ligusticifolia* Nuttall**

Nez Perce name:

Plant family: Ranunculaceae

English name: western clematis

Description: Sprawling woody vine from large woody roots, leaves compound with three leaflets, flowers small, whitish, in large clusters, fruits with a long feathery plume.

Habitat: Mesic to moist places from the lowlands to moderate elevations, often clambering over other plants or fences; western US and adjacent Canada.

Plant parts used: roots, bark, sap, woody stems, leaves, fruit fluff

Use Category: Technology, Medicine, Cosmetic

Specific uses: Technology: wood for fire-starting hearth stick; inner bark fiber for cordage, bowstrings, and carrying nets, fruit fluff as diapers. Medicine: tonic, general indisposition, fever, skin problems (decoction); boils (sap); toothache (cut stem end); colds, sore throats (leaves chewed); women's contraceptive (root/stem decoction); bed-wetting, scalp problems (decoction). Cosmetic: shampoo (decoction).

Other plants used in similar ways: Cordage: *Lonicera ciliosa*

***Clintonia uniflora* (Schultes) Kunth**

Nez Perce name:

Plant family: Liliaceae

English name: beadlily

Description: Low herbaceous perennial from creeping succulent rhizomes; leaves two or three, rather succulent, with veins paralleling the margins; flowers usually one or two, white, with 6 "petals;" fruits blue berries.

Habitat: Moist spots in coniferous forests from the foothills to moderate elevations in the mountains; northwestern US, California, and British Columbia. and southwest Alberta.

Plant parts used: fruits

Use Category: Technology, Medicine

Specific uses: Technology: fruits for blue coloring. Medicine: kidney stones (rhizome juice) wounds (plant poultice); eyewash (juice)

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use Category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use Category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tips; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Echinodontium tinctorium* Elliott & Everh.**

Nez Perce name:

Plant family: Polyporaceae

English name: red bracket fungus

Description: Woody rounded fungus similar to bracket fungi, bright red-orange.

Habitat: Usually growing on trunks of living coniferous trees, lowlands to high elevations in western North America.

Plant parts used: fruiting body

Use Category: Technology, Medicine

Specific uses: Technology: red face/body paint. Medicine: rubbed on skin for protection from sunburn and insect bites.

Special preparation: Technology: the fungi were dried by heating in a fire, powdered, and mixed with fat or pitch. Sometimes fat was smeared on the face and the powdered fungus sprinkled on.

Other plants used in similar ways: Coloring: *Lithospermum rudemale*

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use Category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use Category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Eriogonum heracleoides* Nuttall var. *angustifolium* (Nuttall) Torrey & A. Gray**

Nez Perce name:

Plant family: Polygonaceae

English name: parsnip-flowered wild buckwheat

Description: Herbaceous perennial with thin woody stems having a cluster of narrow leaves; leaves whitish beneath; flowers small, cream-colored or pale yellow, sometimes with red edges, borne in dense ball-shaped heads that are in an umbrella-shaped cluster.

Habitat: Deep to shallow rocky soils in lowlands and up to 6000 ft. elevation; inland western US and British Columbia.

Plant parts used: root, leaves, young flowering stems

Use Category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: young stems for vegetable. Beverage: leaves for tea. Medicine: diarrhea (root decoction); general indisposition, internal pains, lung ailments, colds, syphilis, washing infected cuts (root/stem decoction); tuberculosis and other lung problems, eyewash, skin sores, cuts (infusion), swellings (infusion or ointment with grease); illness (steam inhaled); rheumatism, stiff/aching joints/muscles, sprains (steam from plants). Spiritualism: in sweathouse as ceremonial wash.

Special preparation: Medicine: for an ointment the whole plant (including roots) was roasted, powdered, and mixed with grease, or the plant was burned and the ashes mixed with grease. A decoction was also made from the whole plant.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use Category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc.
Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Galium aparine* Linnaeus**

Nez Perce name:

Plant family: Rubiaceae

English name: cleavers

Description: Sprawling annual from a small taproot, stems square, with hooked hairs; leaves narrow, in whorls of five-8, bearing hooked hairs; flowers white, with four petals; fruits round, in pairs, covered with hooked hairs.

Habitat: Cosmopolitan, in moist places.

Plant parts used: foliage

Use Category: Food, Medicine

Specific uses: Food: young shoots for potherb; roasted seeds for coffee-flavored drink. Medicine: lymphatic tonic, diuretic, skin irritations (infusion)

Nutritional value: 1.6% protein. Per 100 g: 145 mg calcium, 3.2 mg iron, 517 mg potassium, 13 mg magnesium, 39 mg sodium, 65 mg phosphorous

***Geranium viscosissimum* Fisher & C.A. Meyer**

Nez Perce name:

Plant family: Geraniaceae

English name: sticky purple geranium

Description: Softly hairy and sticky-glandular herbaceous perennial; leaves palmately lobed, lobes with sharp points; flowers pink to purple, with five petals; fruits capsules that open explosively.

Habitat: Moist slopes and draws at low to moderate elevations; inland western North America.

Plant parts used: roots, sap, leaves

Use Category: Medicine, Spiritualism

Specific uses: Medicine: colds (leaf infusion and sweat bath); bleeding, control of breast-feeding pain (root poultice); eyewash (root decoction or leaf infusion); to reduce head swelling (leaf infusion), sores (crushed leaf poultice), warts, swellings; treating sores and cuts in horses. Spiritualism: love potion.

Special preparation: Medicine: roots were mashed for a poultice, boiled for treating warts, or baked for treating wounds. The leaves were made into a poultice for skin irritations.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath); body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Goodyera oblongifolia* Rafinesque**

Nez Perce name:

Plant family: Orchidaceae

English name: rattlesnake-plantain

Description: Herbaceous perennial with short rhizomes and a *Basal rosette* of dark green ovate leaves with a central white stripe and often white mottlings; flowers small green or white orchids.

Habitat: Forests at low to moderate elevations in western and central North America.

Plant parts used: leaves

Use Category: Medicine

Specific uses: Medicine: tonic (plant infusion); cuts, sores, blisters, rattlesnake bite (poultice of split leaves); childbirth aid (plant chewed).

Special preparation: Medicine: for a poultice the epidermis peeled off leaves and the internal tissue placed on the skin.

Other plants used in similar ways: Medicine: *Mimulus guttatus*, *Populus balsamifera* ssp. *trichocarpa*

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use Category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use Category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat

(root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Holodiscus discolor* (Pursh) Maxim.**

Nez Perce name: hisiimseqe

Plant family: Rosaceae

English name: ocean spray

Description: Tall shrub with shallowly-lobed and toothed leaves; flowers tiny, cream-colored, in dense pendant clusters, fruits capsules.

Habitat: Mesic to moist forests, lowlands to mid montane, western US and adjacent Canada.

Plant parts used: wood, stems and leaves

Use Category: Technology, Medicine

Specific uses: Technology: wood tough and hard, used for digging sticks, bows, arrow shafts, cambium scrapers, mat needles, drum hoops, armor, spear/harpoon shafts, brace in dip nets, cradleboard hoops, tipi pins, drum hoops, gambling pieces. Medicine: diarrhea (stems/leaves); burns (powdered bark with grease); sores (powdered leaves).

Special preparation: Technology: the wood was often fire-hardened and polished with horsetails. Medicine: stems and leaves were brewed into a medicinal tea.

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Philadelphus lewisii*.

Comments: One report (Broncheau-McFarland 1992) indicates that fruits are edible, but this is perhaps a mistake since fruits are tiny dry capsules.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use Category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimile**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red

coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.
Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: písqu

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use Category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Letharia vulpina* (Linnaeus) Hue**

Nez Perce name:

Plant family:

English name: chartreuse wolf lichen

Description: Bright chartreuse lichen growing in branched tufts on coniferous tree branches and trunks.

Habitat: Open forests of the mountains of western North America.

Plant parts used: thallus

Use Category: Technology, Medicine

Specific uses: Technology: decoction for lemon-yellow coloring in basketry, yellow face/body paint. Medicine: to reduce inflammation of ulcers.

Special preparation: Technology: the lichens were boiled, sometimes with Oregon-grape rhizomes added to intensify the color. For body paint they were dipped in water and brushed on the skin.

***Lewisia redeviva* Pursh**

Nez Perce name: litá n

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets;

stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

***Ligusticum canbyi* Coulter & Rose**

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use Category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person (root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in mends sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Linnaea borealis* Linnaeus**

Nez Perce name:

Plant family: Caprifoliaceae

English name: twinflower

Description: Trailing evergreen perennial with slender woody stems spreading along the ground surface; leaves in pairs on short upright stems, leathery; flowers usually in pairs at the tips of upright stems, pinkish-white, bell-shaped.

Habitat: Forests at low to moderate elevations, circumboreal.

Plant parts used: leaves or entire plant

Use Category: Medicine

Specific uses: Medicine: colds, fever, stomach cramps (plant decoction); headache (poultice); limb inflammation (mashed plant); menstrual difficulties (whole plant infusion).

Special preparation: Medicine: the plants were gathered in summer

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use Category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lithospermum ruderale* Douglas**

Nez Perce name:

Plant family: Boraginaceae

English name: stoneseed gromwell

Description: Herbaceous perennial from a fleshy taproot, the rosette or cluster of stems bearing many narrow more or less sessile leaves; flowers pale yellow, short-tubular, with five petals; fruit four shiny smooth pale nutlets.

Habitat: Open dry meadows and slopes up to mid-elevations, primarily east of the Cascade Mountains; northwest US, California, British Columbia.

Plant parts used: root, fruits

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: root for red coloring. Medicine: diarrhea, rectal itch, diuretic, internal bleeding, wounds, burns, contraceptive, washing sores, skin disinfectant, to stimulate appetite (root infusion/decoction). Spiritualism: charm to stop thunderstorm, make it rain, bring good luck fishing, or bring bad luck to an enemy. Cosmetic: fruits as beads.

Other plants used in similar ways: Coloring: *Echinodontium tinctorum*, *Galium boreale*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use Category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Specific uses: Medicine: internal bleeding (spores in water); burns, sores, skin rashes (spore poultice); nosebleed (puffball pieces held to nose); soporific (spores rubbed on infants' eyelids and cheeks); styptic in veterinary treatments (puffball pieces held against cuts).
Spiritualism: mentioned in stories

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice).
Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating

Nutritional value: Good source of calcium, iron, magnesium

***Mimulus guttatus* DeCandolle**

Nez Perce name:

Plant family: Scrophulariaceae

English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often withered dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use Category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers *bright yellow, with broad thick petals*, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use Category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Oenothera villosa* Thunberg var. *strigosa* (Rydberg) W. Dietrich & Raven**

Nez Perce name:

Plant family: Onagraceae

English name: common evening-primrose

Description: Biennial with *Basal rosette* and linear leaves along flowering stalk; flowers striking, delicate, lemon-yellow, with a narrow tubular base and four petals; fruit a capsule.

Habitat: Moist meadows and streambanks of lowlands to moderate elevations; inland western and central US.

Plant parts used: roots, tops

Use Category: Food, Medicine

Specific uses: Food: leaves. Medicine: bruises (plant poultice); hemorrhoids (root decoction externally or hot root poultice).

Special preparation: Food: the leaves were cooked.

Comments: Formerly called *Oenothera strigosa*.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Osmorhiza occidentalis* (Nuttall) Torrey**

Nez Perce name:

Plant family: Apiaceae

English name: western sweet-cicely

Description: Herbaceous perennial from a taproot; leaves ternately compound, fern-like; flowers tiny, yellow or greenish, in umbrella-shaped clusters; fruits very narrow, pendulous in pairs.

Habitat: Lowland to midmontane forests and meadows, western North America from Washington to southwest Alberta and southwards.

Plant parts used: roots

Use Category: Food, Medicine, Smoking, Confection

Specific uses: Food: steeped seeds for flavoring. Technology: root pieces as deodorant.

Medicine: tonic, lung ailments (root decoction); digestive ailments, colds, sore throats, coughs, fever, digestive aid, fever, to induce labor (roots chewed, root decoction/infusion, or plant infusion); sores, swollen breasts, eyewash (root infusion externally); headache (root piece in nostrils); toothache (root piece on tooth). Smoking: leaves in smoking mix. Confection: root chewed

***Pachistima myrsinites* (Pursh) Rafinesque**

Nez Perce name:

Plant family: Celastraceae

English name: mountain boxwood

Description: Low evergreen shrub with opposite glossy leathery leaves with serrate margins; flowers with four maroon petals; fruits dry capsules.

Habitat: Shaded places in the mountains of western North America, at moderate elevations except lower near the Washington coast.

Plant parts used: leaves

Use Category: Medicine, Smoking

Specific uses: Medicine: kidney ailments, tuberculosis, colds, broken bones (branch decoction/infusion); pain, swellings (leaf poultice). Smoking: in smoking mixtures.

Special preparation: Medicine and smoking: the plants were gathered in summer (usually) and dried.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*

***Phacelia hastata* Douglas**

Nez Perce name: **yewék**

Plant family: Hydrophyllaceae

English name: silverleaf phacelia

Description: Short densely hairy herbaceous biennial or perennial from a taproot; leaves gray-hairy; flowers in dense coiled clusters, whitish, tubelike with five lobes.

Habitat: Shrub steppe, open forests, talus, slopes, and dry meadows from lowlands to alpine areas; widespread in interior western North America.

Plant parts used: roots

Use Category: Medicine

Specific uses: Medicine: menstrual difficulties (root decoction)

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use Category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Phragmites australis* (Cavanilles) Trinius ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, "common reed"

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, sap, shoots, leaves

Use Category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, *pipe stems*, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid "honey" collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Physocarpus malvaceus* (Greene) Kuntze**

Nez Perce name:

Plant family: Rosaceae

English name: ninebark

Description: Tall shrub with alternate three-five lobed maple-shaped leaves; flowers white, in dense round clusters; fruits clustered dry capsules.

Habitat: Moderate elevations; northern inland western US and southern Canada.

Plant parts used: stems

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots. Medicine: twigs for emetic. Spiritualism: washing hunting equipment, especially arrows, for protection from spells, charm to inflict bad luck on enemies.

Special preparation: Food: roots were steam cooked

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use Category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: bark, pitch, wood, branches, young shoots, cones

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qápqap**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudoregneria spicata* (Pursh) A. Löve**

Nez Perce name:

Plant family: Poaceae

English name: bluebunch wheatgrass

Description: Herbaceous perennial grass usually cespitose, occasionally rhizomatous (e.g. when grazed); leaves bluish-green; flowers in a narrow spike with one spikelet per node.

Habitat: Dry grasslands, shrub-steppe, and open dry forests, in shallow rocky soils to deep sandy loams at low to moderate elevations in interior western North America.

Plant parts used: stems and leaves

Use Category: Technology

Specific uses: Technology: basketry (grass mats); layering in camas roasting pits, wrapping food (for storage in cache pits, camas loaves for cooking); to soak moisture from hides being cured; in construction of sod houses; tinder.

Other plants used in similar ways: Textiles: *Elymus elymoides*, *Hesperostipa comata*.

Comments: Formerly called *Agropyron spicatum*.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, decayed wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: teqsté qs

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted.

The white inner portion was dried and pounded into flour, removing the fibers

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Ranunculus glaberrimus* Hooker**

Nez Perce name: **qémqem**

Plant family: Ranunculaceae

English name: sagebrush buttercup

Description: Small succulent herbaceous perennial from rather fleshy roots; leaves alternate, fan-shaped, usually with three rounded lobes at tip; flowers yellow, with five petals; fruits a cluster of small dry achenes.

Habitat: Sagebrush steppe, grasslands, and ponderosa pine forests, low elevations to montane; inland western US and Canada.

Plant parts used: whole plant, toxic

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: poison for arrow points. Medicine: rheumatism, body pains, stiffness, sore muscles or bones (plants in steam or as poultice); warts (flower/leaf poultice).

Spiritualism: decoction as body wash or for purification in sweathouse

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use Category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitílitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use Category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamitiqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use Category: Contact causes skin irritation.

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes inerme* Rydberg**

Nez Perce name: **pí łus**

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streambanks, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use Category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

Rosa gymnocarpa Nuttall

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use Category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rosa nutkana Presl

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: salmonberry

Description: Large trailing shrub with leaves if three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.

Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.

Plant parts used: young shoots, fruits

Use Category: Food

Specific uses: Food: young shoots for spring greens; fruits

Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use Category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use Category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Salix amygdaloides* (Andersson)Coville**

Nez Perce name: táxs

Plant family: Salicaceae

English name: peachleaf willow

Description: Dioecious deciduous tree, leaves narrow, yellow-green; flowers in catkins, fragrant; fruits with "cotton."

Habitat: Streamsides and other wet places, lowlands to foothills; northwest US and adjacent Canada, lowlands to foothills.

Plant parts used: wood, bark, branches

Use Category: Technology, Medicine

Specific uses: Technology: bark for coarse cordage, lashing; wood for fires; branches for longhouse and sweat lodge frames. Medicine: leg/foot cramps (bark decoction)

***Salix exigua* Nuttall**

Nez Perce name: táxs

Plant family: Salicaceae

English name: sandbar willow, coyote willow

Description: Colonial rhizomatous shrub forming dense thickets; slender very flexible stems with usually red bark, narrow long-pointed leaves, flowers and fruits in catkins which appear after the leaves.

Habitat: Wet sandbars, riparian fringes, ponds and lakes at low to moderate elevations; North America.

Plant parts used: stems, bark

Use Category: Technology, Medicine

Specific uses: Technology: bark for cordage, to weave bags, baskets, clothing, saddle blankets; stems in coarse cordage, baskets, binding fish-drying racks, fish traps, weirs, rafts, pit house frames, cabling for suspension bridges; pole-size for sweat lodge/tipi frames. Medicine: fever (bark)

***Salix lucida* Muhlenberg var. *lasiandra* (Bentham) E. Murray**

Nez Perce name: táxs

Plant family: Salicaceae

English name: whiplash willow

Description: Deciduous dioecious tree with narrow-ovate leaves with glands near base, flowers in catkins, seeds in "cotton."

Habitat: Wet places, lowlands to moderate elevations; western and central North America.

Plant parts used: roots, bark, branches

Use Category: Technology, Medicine

Specific uses: Technology: bark for foundation elements in baskets, as thread in basketry. Branches were used for fire-starting hearth sticks and sweat lodge frames. Medicine: pneumonia (inner bark decoction); broken bones (inner bark poultice, decoction to bathe injured area); leg/foot cramps (branch tip decoction as soak)

***Salix scouleriana* Barratt**

Nez Perce name: táxs

Plant family: Salicaceae

English name: Scouler willow

Description: Deciduous large dioecious shrub with leaves having rounded tips; flowers and fruits in catkins.

Habitat: Moist places, usually along streams, low to high elevations; western North America.

Plant parts used: inner bark

Use Category: Food, Technology, Medicine

Specific uses: Food: inner bark as emergency food. Technology: bark for binding and to make cordage for bags, clothing, strong rope; wood to smoke salmon. Medicine: stop bleeding of wounds (bark/sap poultice); serious cuts, broken bones (inner bark poultice with powdered tree fungus); healing sanitary napkins (shredded inner bark); increasing blood flow after childbirth, help nursing baby (branch decoction).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Salix sitchensis* Sanson**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: Sitka willow

Description: Deciduous large dioecious shrub with velvety twigs and leaves; flowers and fruits in catkins, stamen one per flower.

Habitat: Moist to wet places at low to high elevations; Pacific western North America.

Plant parts used: inner bark

Use Category: Food

Specific uses: Food: emergency food. Technology: firewood. Medicine: stomach ailments (branch infusion).

Special preparation: Food: inner bark was sometimes dried and ground into flour to improve the taste

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Sedum lanceolatum* Torrey var. *lanceolatum

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits upright follicles.

Habitat: Rocky or gravelly places, lowlands to high elevations; western and central North America.

Plant parts used: leaves

Use Category: Water, Food, Medicine

Specific uses: Food: eaten when young. Beverage: emergency water source. Medicine: skin irritations, hemorrhoids (juice or poultice); childbirth recovery (stem/leaf/flower infusion); laxative (stem/leaf/flower infusion or fresh leaves chewed)

***Sedum stenopetalum* Pursh**

Nez Perce name:

Plant family: Crassulaceae

English name: stonecrop

Description: Succulent herbaceous perennial plant with shallow rhizomes, leaves more or less linear, dense, with a strong vein beneath, alternating along stem, usually with short shoots at base of flowering shoot, short shoots with dense leaves; flowers bright lemon-yellow, with five petals; fruits widely spreading follicles.

Habitat: Dry or well-drained places, low to high elevations in Northwest US and British Columbia.

Plant parts used: stems, leaves

Use Category: Food, Medicine

Specific uses: Food: eaten when young. Medicine: skin irritations, hemorrhoids (juice or poultice); syphilis (whole plant infusion)

***Shepherdia argentea* (Pursh) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: silver buffaloberry

Description: Large deciduous shrub or small tree with spine-tipped branches, whitish gray-green rounded leaves in pairs; flowers small, in leaf axils; fruits yellowish-red berries.

Habitat: Moist places, usually along watercourses, moderate elevations; interior western and central US and southern Canada.

Plant parts used: fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: fruits for red coloring. Medicine: stomach ailments, mild laxative (fruits eaten).

Special preparation: Food: fruits were usually crushed and whipped into a froth, often sweetened with serviceberries (now with sugar). Also used for sauce, jams, and jellies.

Other plants used in similar ways: Food: *Shepherdia canadensis*.

Comments: Best taste when gathered after frost.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use Category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use Category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use Category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use Category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).

Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Sorbus scopulina* Greene**

Nez Perce name:

Plant family: Rosaceae

English name: Cascade mountain-ash

Description: Tall shrub with pinnately compound alternate leaves having narrow pointed leaflets; flowers tiny, creamy white, in dense flattish clusters; fruits glossy red berry-like pomes.

Habitat: Montane forests in western and central North America.

Plant parts used: twigs, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: earache (warmed twig inserted into ear); overly frequent urination, to stop bed-wetting (branch infusion).

Special preparation: Food: fruits were usually boiled before eating. For winter they were buried fresh or dried

***Spiraea betulifolia* Pallas**

Nez Perce name:

Plant family: Rosaceae

English name: birchleaf spiraea

Description: Tall shrub with ovate leaves; flowers white or cream-colored, small, in dense rounded clusters; fruits tiny capsules.

Habitat: Woods or open hillsides, wet or dry, from sea level to high elevations; inland northern and central US and adjacent Canada east to Saskatchewan, South Dakota, and Wyoming.

Plant parts used: leaves

Use Category: Beverage, Medicine

Specific uses: Beverage: leaves for tea. Medicine: stomach ailments (leaf infusion, whole plant infusion, or root/leaf decoction); inflammation, fever, colds (leaf infusion); colds, poor kidneys, ruptures, pain relief (e.g. menstrual pain, abdominal pain) (branch infusion); diarrhea (root/leaf decoction); venereal disease (leaf infusion or leaf/branch decoction)

***Spiraea douglasii* Hooker**

Nez Perce name:

Plant family: Rosaceae

English name: pyramid spiraea

Description: Medium shrub with ovate leaves; flowers small, lilac or rose, in a dense pyramid-shaped cluster; fruits tiny capsules.

Habitat: Wet places from sea level to high elevations; western North America south to northern Idaho, northeast Oregon, and northwest California.

Plant parts used: leaves

Use Category: Beverage, Technology, Medicine

Specific uses: Beverage: leaves for tea. Technology: branches for brooms, drying and smoking salmon. Medicine: stomach ailments, colds, fever, inflammation, venereal disease, pain relief (leaf infusion)

***Streptopus roseus* Michaux**

Nez Perce name:

Plant family: Liliaceae

English name: twisted-stalk

Description: Herbaceous perennial from rhizomes; leaves ovate, parallel-veined, shiny, bases clasping the stem; flowers white, yellowish, or rose, sometimes streaked or spotted; fruits red berries.

Habitat: Streambanks, moist woods, usually above 3000 ft. elevations; western boreal North America.

Plant parts used: fruits

Use Category: Food, Medicine

Specific uses: Food: fruits eaten but not a favorite food. Medicine: tonic, stomach ailments (plant infusion); internal pains (rhizome decoction). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use Category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thalictrum occidentale* A. Gray**

Nez Perce name:

Plant family: Ranunculaceae

English name: western meadowrue

Description: Herbaceous glabrous dioecious perennial with tri-compound leaves; flowers small, purplish or green, without petals, in racemes; fruits small follicles.

Habitat: Forests, shrublands, meadows, low to moderate elevations; western North America from British Columbia to northern California and Colorado.

Plant parts used: roots, seeds

Use Category: Food, Medicine, Cosmetic

Specific uses: Food: fruits as flavoring in pemmican, dried meat, broth. Medicine: tonic, colds, fever. chills (root decoction); to improve blood circulation (roots chewed and eaten); chest

pain (seed infusion); wounds (mashed root poultice). Cosmetic: powdered fruits in water for hair and body wash; fruits as household and clothing deodorant, insect repellent, perfume

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Tragopogon dubius* Scopoli**

Nez Perce name:

Plant family: Asteraceae

English name: goatsbeard, oyster plant

Description: Biennial from a fleshy taproot, with milky sap and long pointed grass-like leaves; flowers yellow, in a dense head; fruits dry, with a long-stalked feathery plum on top.

Habitat: Introduced from Eurasia; weedy in wet to dry habitats at low to high elevations.

Plant parts used: root, seed fluff

Use Category: Food, Technology, Confection

Specific uses: Food: roots. Technology: seed fluff to stuff pillows. Confection: milky sap chewed.

Special preparation: Confection: for chewing, stems were broken off at the base. The milky sap was allowed to dry and rolled into a ball

Nutritional value: Roots 2.9% protein, 0.6% fat, 18% carbohydrates. Per 100 g: 11 mg vitamin C, 47 mg calcium, 1.5 mg iron, 380 mg potassium, 66 mg phosphorous.

Comments: Roots are rather bitter and probably not a favored food. This is an introduced plant so was not available before Europeans arrived in the Pacific Northwest.

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use Category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

***Trillium ovatum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: trillium, wake-robin

Description: Herbaceous perennial from a bulb, with three leaves and a single flower in the center; flower having three white petals turning pinkish in age; fruit a capsule.

Habitat: Open to dense forests or along streams, at low to high elevations; western US and adjacent Canada.

Plant parts used: bulbs

Use Category: Medicine

Specific uses: Medicine: sore eyes (powdered bulb or bulb infusion); skin conditions (bulb poultice)

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátóxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use Category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.
Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetelwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush)

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Veratrum spp.

Nez Perce name:

Plant family: Liliaceae

English name: false hellebore, corn-lily

Description: Herbaceous perennial with succulent stems and numerous short, broad leaves with parallel veins, flowers tiny, greenish or creamy-white in dense branched clusters.

Habitat: Wet places; North America.

Plant parts used: toxic

Use Category: Medicine

Specific uses: Medicine: decongestant, to induce sneezing (root as inhalant)

Verbascum thapsus Linnaeus

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use Category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

Viburnum edule (Michaux) Rafinesque

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

Vicia americana Muhlenberg var. truncata (Nuttall) Brewer

Nez Perce name:

Plant family: Fabaceae

English name: American vetch

Description: Trailing herbaceous perennial with pinnately-compound leaves with tendrils at the tips, purple flowers in loose long-stalked heads; fruits small pods.

Habitat: Meadows and similar habitats in lowlands to moderate elevations; North America from Alaska and the Pacific Coast south to Mexico, east to Ontario, West Virginia, and Missouri.

Plant parts used: foliage, seeds

Use Category: Food, Spiritualism

Specific uses: Food: young foliage sometimes eaten cooked. Spiritualism: plant infusion as bathing solution in the sweathouse.

Special preparation: Food: foliage was boiled or baked

Viola spp.

Nez Perce name:

Plant family: Violaceae

English name: violets

Description: Small herbaceous perennials with triangular leaves; flowers white, yellow, pink, blue, or purple.

Habitat: Meadows, woods, riparian areas; sea level to high mountains.

Plant parts used: leaves, flowers

Use Category: Food

Specific uses: Food: leaves and flowers eaten fresh

Nutritional value: Flowers 150 mg vitamin C per 100 g

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use Category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in "ears" with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use Category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Zigadenus spp.

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use Category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed.

Turner, N. J., and A. Davis. 1993. "When everything was scarce": the role of plants as famine foods in Northwestern North America. *Journal of Ethnobiology* 13(2): 171-201.

Summary: Winter and early spring were the most critical times for the availability of sufficient foods among Columbia Plateau Native people. This interesting paper investigates the plant foods used in times of famine. Plant foods are considered in four categories: foods regularly eaten and especially important during winter and early spring (Table 1), foods eaten to some extent but not important in the regular diet (Table 2), foods never eaten except in times of extreme hunger (Table 3), and hunger suppressants and thirst quenchers (Table 4). Nutritional contributions of some of these foods are listed in Tables 5 and 6. All these foods have great cultural importance because of their survival value.

Methodology: Field and library research, interviews

Significance to Nez Perce ethnobotany: Nez Perce foods are included in this analysis.

Implications for future management of Nez Perce National Historical Park lands:

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Special interests: Traditional plant uses

Methodology: Field and library research, interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (63 total)

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: bark, pitch, decayed wood, boughs, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Abies lasiocarpa* (Hooker) Nuttall**

Nez Perce name: **pató sway**

Plant family: Pinaceae

English name: balsam; subalpine fir

Description: Straight narrowly pyramidal tree with branches in flat layers; needles with musky scent, short, with two white stripes on the underside; cones upright, disintegrating to leave the central axis on the branch.

Habitat: Often in poorly drained soils, at high elevations (up to timberline) and in lower frost pockets; throughout the Northwest US.

Plant parts used: branches, boughs, rotting wood, cones

Use category: Technology, Medicine, Spiritualism, Confection

Specific uses: Technology: bark for roofing, branches for fish net poles, spear poles, tipi poles; pitch for waterproofing; boughs for mattresses, sitting, floor covering, burned for deodorant; rotten wood for tanning hides

Medicine: respiratory problems (pitch), coughs (bark tea), bruises (bark tea), goiter (pitch poultice), external antiseptic (pitch poultice). Medicine: constipation (leaves); tuberculosis/respiratory problems (inner bark eaten, leaves or pitch as chest poultice); bruises, sprains (bark tea); cuts, sores, wounds, skin infections (leaves or pitch); hair restorer (leaves or pitch). Spiritualism: purification (burned in sweat lodge), spiritual protection (boughs hung or burned for incense). Insect repellent: (leaves in clothing, boughs burned for smoke). Confection: powdered cones.

Special preparation: Medicine: leaves or pitch were powdered and mixed with lard or marrow for sores and wounds. Leaves were ground for body deodorant. For hair oil leaf powder was mixed with lard and sometimes lovage, snowbrush ceanothus, and/or bracken fern. Powdered cones were mixed with back fat and marrow.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a *Basal rosette*, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilílx**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a *Basal rosette*, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló łas**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth

recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum arvense* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: field horsetail

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to sheaths around the stem, with a black band at the toothed top, sheaths tipped with black teeth; sterile stems branched in whorls, fertile stems unbranched, whitish or brown; reproducing by spores borne in cones.

Habitat: Moist to semi-dry places at low to high elevations; North America, Eurasia.

Plant parts used: stems, young shoots

Use category: Food, Technology, Medicine

Specific uses: Food: younger stems eaten raw or cooked. Technology: stems for scouring, filing, sandpaper; whistles; crushed for pale pink coloring; administering medicine to babies (stems). Medicine: diuretic (rhizome infusion), to stimulate urination (young shoot decoction); respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid to expel afterbirth (stem infusion); venereal disease (plant decoction with *Pachistima myrsinites*); bleeding (plant poultice); irritated skin, e.g. underarms, poison-ivy (pounded stem poultice); burns, sore mouth (plant ashes); to avoid foot cramps on long walks (powdered stems in moccasins); horse restorative (powdered stems in water).

Special preparation: Food: the stems were peeled.

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum hyemale*, *Equisetum laevigatum*, *Equisetum palustre*

***Equisetum hyemale* Linnaeus**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: Dutch scouring-rush

Description: Stiff herbaceous rhizomatous evergreen perennial with more or less hollow thin whorled branches, leaves reduced to sheaths with black band at top and usually also at base, sheaths tipped with black teeth which are deciduous or persistent; reproducing by spores borne in cones.

Habitat: Moist to wet places in lowlands to moderate elevations in the mountains; circumboreal and south to California and Florida.

Plant parts used: rhizomes, stems

Use category: Food, Technology, Medicine

Specific uses: Technology: stems for scouring, filing, sandpaper, basketry overlay, purple to black coloring, used for tubes to give medicine to infants. Medicine: bleeding, lower abdominal pain (stem poultice); burns (stem ashes); diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold, childbirth aid (stem infusion); sores, venereal disease (stem decoction with *Pachistima myrsinites*); poison-ivy (plant pounded, mixed with water) sore eyes (liquid collected from stems); head lice (collected into hollow stem segments and floated downstream).

Special preparation: Technology: stems were sometimes mixed with pitch and grease for a polishing mixture used on pipes and other materials.

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum laevigatum*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackamatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: **písku**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium canbyi (Coulter & Rose) Coulter & Rose

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cou was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cou was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **tiáalam**; shoots **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium gormanii* (T. Howell) Coulter & Rose**

Nez Perce name: **cí ci ta**

Plant family: Apiaceae

English name: salt-and-pepper biscuitroot

Description: Small low herbaceous perennial with tuberous root and divided leaves; flowers in dense cluster, white with black anthers (look like lichens); fruits in flat pairs, "striped" with oil tubes. The earliest lomatium to come up in spring.

Habitat: Open rocky places, moist crevices and slopes, dry areas, lowlands to moderate elevations; central Washington to northern Idaho and south to northeast California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were eaten but not preferred.

Special preparation: Food: roots were dug in early spring, peeled, and usually cooked before eating. For winter they were sometimes dried and ground.

Nutritional value: Tubers 7% protein, 2% fat, 89% carbohydrates. Per 100 g: 180 mg calcium, 12 mg iron, 48 mg magnesium, 1 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root to some tastes like kerosene.

***Lomatium grayi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **wewí mn**

Plant family: Apiaceae

English name: desert-parsley, "Indian-celery"

Description: Herbaceous perennial with taproot and bright to gray-green finely-divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky drainages, moist slopes, and open areas including dry rocky stream channels, lowlands to moderate elevations; widespread in the inland northwest US and southward.

Plant parts used: early spring shoots (first greens); root

Use category: Food

Specific uses: Food: young shoots eaten fresh April-May; roots as a less-favored food.

Special preparation: Food: roots were dug in spring. Young shoots were gathered in early spring and stalks peeled.

Nutritional value: Shoots 15 mg vitamin C per 100 g.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium salmoniflorum* (Coulter & Rose) Mathias & Constance**

Nez Perce name: **ilqú tx**

Plant family: Apiaceae

English name: Salmon River desert-parsley

Description: Herbaceous perennial with tuberous root and finely divided leaves; flowers salmon-yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open rocky lowland slopes; occurring locally in southeast Washington, west central Idaho, and northeast Oregon.

Plant parts used: leafy shoots, tuberous root

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens. Medicine: tuberculosis, to stimulate appetite (root infusion); sinus ailments (roots smoked); eyewash (root oil); sores (root oil rubbed on); insect repellent (root smoke).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried and ground for winter.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium triternatum*.

Comments: Especially important source of vitamin C in spring.

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawitx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Picea engelmannii* Parry**

Nez Perce name: **heslíps**

Plant family: Pinaceae

English name: Engelmann spruce

Description: Coniferous tree with dense needle-like leaves square in cross-section and sharp-pointed, bluish-green; cones with small papery scales.

Habitat: Moist to swampy places in the mountains, usually above 3000 ft. elevation; inland British Columbia and Alberta south to California and New Mexico.

Plant parts used: rootlets, bark, pitch, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: inner bark, sap. Beverage: tea from branchlets. Technology: split rootlets in basketry or for sewing; bark for baskets, utensils, roofing, canoes. Medicine: tuberculosis, other respiratory ailments (bark infusion); coughs, cancer (leaf and/or pitch decoction); skin irritations, sores (pitch poultice or twig ashes with grease). Spiritualism: boughs for incense, cleansing agent, spiritual protection/purification. Cosmetic: boughs for scent, deodorant

***Pinus albicaulis* Engelmann**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes

crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athletes foot; pitch as adhesive, caulking.

Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes viscosissimum* Pursh**

Nez Perce name:

Plant family: Grossulariaceae

English name: sticky currant

Description: Shrub with glandular five-lobed leaves; flowers bell-shaped, white or green to purple, in many small clusters; fruits blue-black berries, not very tasty.

Habitat: Wet or dry montane forests of inland western US and British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: the fruits were eaten fresh or cooked and also used in pemmican.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled.

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorus.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: tá msas

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: he?ilpé?ilp

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtlá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent.

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: stary Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.
Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries).
Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátoxc**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 "petals"; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly.

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

Turner, N. J. 1997. Food Plants of Interior First Peoples. UBritish Columbia Press. Vancouver, British Columbia. 215 pp.

Summary: This book is part of Nancy Turner's series dealing with uses of plants in indigenous British Columbia cultures. It treats food plants of Columbia and Fraser Plateau people. The plants are discussed by family and their uses listed, along with preparation methods. Most plants are illustrated with color photographs. Appendix 2 mentions plants occasionally eaten as well as tea and tobacco plants; Appendix 3 lists non-native plants used for food; and Appendix 4 discusses plants considered toxic or inedible.

Methodology: Interviews, field and library research

Significance to Nez Perce ethnobotany: All of Turner's books contain much information that is applicable to Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Turner, Nancy J.

Author category: Ethnobotany

Background: Professor of Environmental Studies, University of Victoria, Research Affiliate, Royal British Columbia Museum; Adjunct Professor University of British Columbia, Vancouver. Ph.D. University of California, Berkeley; B.Sc. University of Victoria Canada

Special interests: Traditional plant uses

Methodology: Interviews, field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (97 total)

***Allium acuminatum* Hooker**

Nez Perce name:

Plant family: Liliaceae

English name: tapertip onion

Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.

Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows,

also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits, seed fluff

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plant's milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea.

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Plant latex can cause severe nausea.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).
Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Nutritional value: Fruits high in vitamin C.
Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétqiqet
Plant family: Berberidaceae English name: creeping Oregon-grape
Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.
Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.
Plant parts used: roots, rhizomes, bark, stems, fruits Use category: Food, Technology, Medicine
Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).
Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis nervosa* Pursh**

Nez Perce name: qiqétqiqet
Plant family: Berberidaceae English name: Oregon-grape
Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.
Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.
Plant parts used: roots, rhizomes, bark, stems, fruits Use category: Food, Technology, Medicine
Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.
Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.
Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp
Plant family: Alectoriaceae English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perce preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus macrocarpus* Douglas**

Nez Perce name: **ló las**

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

***Calypso bulbosa* (Linnaeus) Oakes**

Nez Perce name:

Plant family: Orchidaceae

English name: fairy slipper

Description: Herbaceous perennial from a bulb, with one succulent oval leaf and pink orchid flower with purple spots on the lip.

Habitat: Cool moist forests from the lowlands to moderate elevations in the mountains; western North America.

Plant parts used: flowers

Use category: Spiritualism

Specific uses: Spiritualism: Charm

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Ceanothus sanguineus* Pursh**

Nez Perce name:

Plant family: Rhamnaceae

English name: redstem ceanothus

Description: Medium-sized to tall shrub with finely toothed oval leaves having three main veins paralleling the margins; flowers tiny, white, in dense branched clusters.

Habitat: Open forest areas at various elevations; Northwest U.S., California, and British Columbia.

Plant parts used: bark, wood, leaves

Use category: Beverage, Technology, Medicine

Specific uses: Technology: wood for fuel, smoking meat. Medicine: burns (bark poultice).

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the bark was dried and powdered for poultice

Ceanothus velutinus* Douglas var. *velutinus

Nez Perce name:

Plant family: Rhamnaceae

English name: mountain-balm, sticky-laurel

Description: Rounded shrub with glossy dark green leathery evergreen leaves in pairs; leaves tend to be sticky; flowers small, white, in dense branched clusters.

Habitat: Mountains, often in rocky soils, inland western North America and east to Colorado and South Dakota.

Plant parts used: stems/leaves/flowers

Use category: Beverage, Technology, Medicine, Spiritualism

Specific uses: Technology: soap. Medicine: tonic, inflammations of throat/mouth, diarrhea, general illness, rheumatism, arthritis, broken bones, cancer, weight loss, dandruff, hair stimulant, to condition skin (stem/leaf decoction or infusion); dull pains (stem/leaf decoction); for gonorrhea; burns or sores (salve or leaf poultice); baby powder (powdered leaves); burned for disinfectant and insect repellent. Spiritualism: stem/leaf decoction used for cleansing in sweathouse.

Special preparation: Beverage: the leaves were brewed for tea. Medicine: the leaves were chewed or dried and powdered for salve and mixed with lard. They were also used with *Shepherdia canadensis* to treat gonorrhea

***Chenopodium* spp.**

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds.

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

***Chimaphila umbellata* (Linnaeus) Barton var. *occidentalis* (Rydberg) Blake**

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

***Cicuta douglasii* (DeCandolle) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: water-hemlock

Description: Coarse herbaceous perennial with enlarged chambered underground stem base, leaves pinnately compound, base of stalk wrapping around stem; flowers small, in dense umbrella-shaped cluster.

Habitat: In wet places or quiet water; widespread at various elevations in montane and inland western North America.

Plant parts used: with great care: roots, stem base

Use category: Extremely toxic if eaten. Technology, Medicine

Specific uses: Technology: arrow poison (powdered stem base/roots). This plant was generally avoided but sometimes used for external medicine: leg/back pain (stem base/root poultice); aching bones (plant decoction or boiled stem base/root poultice)

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Clintonia uniflora* (Schultes) Kunth**

Nez Perce name:

Plant family: Liliaceae

English name: beadlily

Description: Low herbaceous perennial from creeping succulent rhizomes; leaves two or three, rather succulent, with veins paralleling the margins; flowers usually one or two, white, with 6 "petals;" fruits blue berries.

Habitat: Moist spots in coniferous forests from the foothills to moderate elevations in the mountains; northwestern US, California, and British Columbia. and southwest Alberta.

Plant parts used: fruits

Use category: Technology, Medicine

Specific uses: Technology: fruits for blue coloring. Medicine: kidney stones (rhizome juice) wounds (plant poultice); eyewash (juice)

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorus

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make

them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: bark, wood, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof. Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf

decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: wild sunflower

Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.

Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.

Plant parts used: leaves, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).

Special preparation: Food: sunflower "seeds" were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.

Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.

Other plants used in similar ways: "Seeds:" *Balsamorhiza sagittata*.

Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc

Plant family: Apiaceae

English name: cow-parship

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Heuchera cylindrica* Douglas**

Nez Perce name:

Plant family: Saxifragaceae

English name: lava alumroot

Description: Herbaceous perennial with scalloped round leaves in a basal cluster; flowers creamy, in a spike.

Habitat: Rocky soils, talus, cliffs, low to high elevations; inland western North America.

Plant parts used: roots

Use category: Technology, Medicine

Specific uses: Technology: mordant. Medicine: blood tonic (root decoction with Oregon-grape); diarrhea, stomach cramps, liver ailments, astringent (root decoction/infusion, chewing roots); digestive problems, liver ailments, sore throat, sores, swelling, eyewash (infusion); tuberculosis (root decoction); rheumatism (root decoction externally); wounds, skin irritations, sores, cuts, snakebite (root poultice, often with Douglas-fir pitch, or root infusion externally); sore throat (root sucked or root decoction/infusion as rinse); mouth sores (plant chewed without swallowing juice); diaper rash (root/puffball spore poultice).

Special preparation: Medicine: roots were boiled, chewed fresh, or mashed and mixed with pitch for a poultice

***Hieracium albiflorum* Hooker**

Nez Perce name:

Plant family: Asteraceae

English name: white hawkweed

Description: Hairy herbaceous perennial with milky juice; flowers white, in small dense heads.

Habitat: Moist to dryish slopes and open forests at low to moderate elevations in the northwest US and adjacent Canada.

Plant parts used: latex, foliage

Use category: Confection

Specific uses: Confection: milky sap.

Special preparation: Confection: the green plant or its coagulated sap was chewed.

Other plants used in similar ways: Chewing gum: *Asclepias speciosa*

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:

Plant family: Hydrophyllaceae

English name: waterleaf

Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.

Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.

Plant parts used: roots, foliage, flower clusters

Use category: Food, Medicine

Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins.

Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: bark, pitch, wood, leaves

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum glandulosum* Nuttall**

Nez Perce name: **písq̄u**

Plant family: Ericaceae

English name: mountain-laurel

Description: Medium shrub with entire ovate leathery leaves, leaf margins curled under; flowers white, in dense clusters.

Habitat: Boggy areas in the mountains; western US and adjacent Canada.

Plant parts used: leaves

Use category: Beverage

Specific uses: Beverage: tea.

Special preparation: Beverage: leaves gathered in summer, dried and brewed.

Comments: Tea is stronger than that from *L. groenlandicum* and possibly toxic if too strong.

Ledum groenlandicum Oeder

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

Lewisia rediviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Ligusticum canbyi Coulter & Rose

Nez Perce name: **qawsqá ws**

Plant family: Apiaceae

English name: Lovage, Canby licorice-root

Description: Fern-like herbaceous perennial from a taproot; leaves finely dissected; flowers white, in umbrella-shaped clusters; fruits in pairs, dry, ribbed.

Habitat: Wet to moist or dryish soil in mountain forests, inland Northwest US.

Plant parts used: root

Use category: Medicine, Smoking, Spiritualism, Cosmetic

Specific uses: Medicine: general internal medicine, sore throat, headache, colds, pneumonia, sinus problems, fever, flu, other contagious diseases, heart conditions, seizures (roots chewed, rubbed on body, or smoked); reviving singers after a dance or unconscious person

(root smoke); cold preventive for babies (root kept near face). Spiritualism: fumigation in men's sweat lodges, sickrooms, and other areas; curing "possession" by spirits. Smoking: leaves in smoking mixture. Cosmetic: hair rinse (roots with buckbrush leaves).

Special preparation: Medicine: roots were boiled for tea, or the steam was inhaled, or the root was ignited for medicinal smoking. Smoking: root pieces were mixed with tobacco

***Lomatium ambiguum* (Nuttall) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: swale biscuitroot

Description: Herbaceous perennial from taproot usually with ball-shaped tuber(s); leaves divided into linear segments up to five-6 mm wide; flowers small, yellow, in umbrella-shaped clusters; fruits dry, flat, winged, in pairs.

Habitat: Open areas at low to moderate elevations, inland western US.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: tubers as a staple; flowers/young leaves as a seasoning. Medicine: colds, sore throat (young leaf/flower infusion).

Special preparation: Food: tubers were ground into flour

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí †**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots = **ʔí cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, "striped" with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days.

Sometimes they were dried for winter. The upper portion of the root was not eaten.

Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot.

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, "Indian-potato"

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other lomatiums.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: péqiy

Plant family: Apiaceae

English name: nineleaf lomatium, "Indian celery"

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in threes; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk.

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers). Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lonicera utahensis* Watson**

Nez Perce name:

Plant family: Caprifoliaceae

English name: red twinberry

Description: Small to tall shrub with rounded oval leaves in pairs; flowers in pairs, pale yellow to white, with a short spur at the base and a tube flaring out to five petals; fruits paired red berries joined at the base.

Habitat: Moist spots in the mountains of western North America.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits were eaten fresh and sometimes used for an emergency source of water

***Lysichiton americanum* Hulten & St. John**

Nez Perce name: **temulté mul té mul**

Plant family: Araceae

English name: skunk-cabbage

Description: Herbaceous perennial from short underground stem; skunk-scented; leaves large, thick, bright green; flowers tiny, in spike with large yellow bract.

Habitat: Wet places, especially swamps, lowlands to moderate elevations; northwestern North America south to central California.

Plant parts used: rhizome and leaves

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: leaves to line and layer camas ovens. Medicine: arthritis, wounds, sores, boils, infections (charred rhizome powder with grease); pain, sores (leaf poultice). Spiritualism: charcoal as protection against witchcraft.

Special preparation: Food: the rhizomes were washed and baked in ashes, or steamed, or boiled, and then pounded

***Mentha arvensis* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: field mint

Description: Peppermint-scented herbaceous perennial from rhizomes; leaves in pairs, ovate, toothed; flowers purple, in dense clusters with each upper pair of leaves.

Habitat: Along streams and in other wet places, lowlands to higher elevations; circumboreal.

Plant parts used: stems/leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: a garnish or snack, often eaten with dried fish. Beverage: a refreshing cold tea. Technology: scent. Medicine: tonic, digestive ailments, kidney problems, colds, cough, fever, headache, swellings, pains, tooth pain, to induce sweating, to prevent influenza, insect repellent (plant infusion); insect repellent on food (crushed leaves sprinkled on) or in home (whole plants); severe colds (inhaling steam from infusion); rheumatism, arthritis (poultice or inhaling steam from infusion); toothache (leaves put in cavity). Spiritualism: charm. Cosmetic: plant as room deodorant, in infusion for hair rinse.

Special preparation: Food: mint greens were sometimes warmed over a fire before eating.

Nutritional value: Good source of calcium, iron, magnesium

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*ístis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: *cawítx*

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus albicaulis* Engelman**

Nez Perce name: *lalxsáway*; seed = *lalak*

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes

crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: **qáppaq**

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages,

poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Potentilla glandulosa* Lindley**

Nez Perce name:

Plant family: Rosaceae

English name: sticky cinquefoil

Description: Herbaceous glandular perennial with hairy pinnately-compound leaves; flowers yellow, with five petals, buttercup-like; fruits dry, in a dense cluster, resembling tiny beans.

Habitat: Moist to dry meadows, shrub steppe, open forests, lowlands to high elevations; western North America.

Plant parts used: whole plant, leaves

Use category: Medicine

Specific uses: Medicine: tonic (whole plant infusion); stimulant (whole plant infusion or weak leaf decoction)

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: tíms

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté ʔs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtitqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use category: Contact causes skin irritation

Specific uses:

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes inerme* Rydberg**

Nez Perce name: **pí łus**

Plant family: Grossulariaceae

English name: sour purple gooseberry; whitestem gooseberry

Description: Shrub with prickly stems and small five-lobed leaves; flowers greenish; fruits purple berries, rather sour.

Habitat: Shrubby or wooded mountain slopes, open ridges, streamsides, and meadows at low to moderate elevations; western North America from British Columbia south.

Plant parts used: roots, fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were picked in summer and eaten fresh or dried and then boiled and thickened for dessert.

Other plants used in similar ways: *Ribes* spp

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Ribes oxycanthoides* Linnaeus**

Nez Perce name: **pí łus**

Plant family: Grossulariaceae

English name: sweet red gooseberry; northern gooseberry

Description: Prickly shrub with five-lobed leaves; flowers white or greenish; fruits red berries.

Habitat: Southern Canada and eastern US; rare in Northwest US but occurring in certain Idaho canyons.

Plant parts used: fruits

Use category: Food, Beverage, Medicine

Specific uses: Food: fruits. Beverage: fruit juice. Medicine: stomach tonic (root decoction).

Special preparation: Food: fruits were gathered in August and eaten fresh or dried.

Other plants used in similar ways: Food: *Ribes* spp

***Rorippa nasturtium-aquaticum* (Linnaeus) Schinz & Thell**

Nez Perce name:

Plant family: Brassicaceae

English name: watercress

Description: Herbaceous perennial aquatic plant forming floating mats; leaves divided into pinnate leaflets; flowers white; fruits small, podlike.

Habitat: Introduced from Europe, in quiet streams and marshes at a variety of elevations.

Plant parts used: whole plants, leaves

Use category: Food, Medicine

Specific uses: Food: leaves. Medicine: liver and kidney ailments (plant decoction); headache, dizziness (plant poultice).

Nutritional value: Foliage 2.2% protein, 0.3% fat, 3% carbohydrates. Per 100 g: 79 mg vitamin C, 151 mg calcium, 1.7 mg iron, 282 mg potassium, 52 mg sodium, 54 mg phosphorous.

Comments: peppery taste; introduced plant.

***Rosa gymnocarpa* Nuttall**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red "hips."

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor

wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled.

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athletes foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta xtá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever.

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Perces obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent.

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Smilacina stellata* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: starry Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, with ovate parallel-veined leaves; flowers small, white, star-shaped, in terminal racemes; fruits green or red berries.

Habitat: Moist or well-drained soils from low to high elevations; North America except south-central and southeast US.

Plant parts used: stems and leaves

Use category: Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: skin irritations, to stop bleeding (root poultice); laxative (stems and leaves, berries). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion);

fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Tricholoma populinum* Lange**

Nez Perce name: **hípew**

Plant family: Tricholomataceae

English name: cottonwood oyster mushroom

Description: Mushrooms two-three inches tall, with round or flattish cap up to about five inches in diameter, light brown at edge and reddish in center, gills white.

Habitat: Sandy ground under decaying cottonwood trees; widespread in North America and Europe.

Plant parts used: mushrooms

Use category: Food

Specific uses: Food: mushrooms.

Special preparation: Food: mushroom caps were peeled, washed, squeezed to remove excess water, and cooked in grease. For storage they were cut in pieces, strung on thongs and dried. Dried mushrooms were soaked and sometimes breaded before frying or boiling in soup or stew.

Nutritional value: 0.75-0.85% protein, 0.5-0.7% fat, 4.17-4.24% carbohydrates. Per 100 g: 0-30 kcal, 0-2.15 mg vitamin C, 1.35-2.53 mg calcium, 6-32 mg chromium, 4.3-5.4 mg magnesium, 64-69 mg manganese, 33.77-36.6 mg phosphorous

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á ta**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

***Veratrum viride* Aiton**

Nez Perce name:

Plant family: Liliaceae

English name: green false hellebore

Description: Tall herbaceous single-stemmed perennial from thick rhizomes; leaves large, sessile, coarsely veined; flowers small, green or yellow-green, in long dense upright-branched clusters; fruits small capsules.

Habitat: Moderate to high-elevation wetlands of North America from Alaska to Ontario and Quebec, south in the Olympic and Cascade Mountains to northern Oregon, and eastward to the Rocky Mountains and North Carolina.

Plant parts used: toxic. leaves, roots

Use category: Technology, Medicine, Smoking

Specific uses: Technology: some groups used stem fibers for cordage in basketry. Medicine: phlebitis, snakebite, stiff legs (mashed roots); blood ailments (dried, burned roots in decoction); indigestion (plant infusion); headache, to induce sneezing or clear nasal passages (crushed dried roots snuffed); broken bones (plant decoction); decongestant (smoke inhaled); rheumatism, arthritis (root poultice); backache (leaf poultice); diaper ointment (ashes of leaves with grease); foot bath (plant decoction). Spiritualism: to jinx people. Smoking: root smoked with tobacco.

Special preparation: Medicine: roots were dried and powdered for a decongestant

***Verbascum thapsus* Linnaeus**

Nez Perce name:

Plant family: Scrophulariaceae

English name: common mullein

Description: Tall biennial with densely soft-hairy leaves; first-year plant a rosette of leaves 6-12 in long; second year with a two-6 ft tall dense flowering spike; flowers yellow, butterfly-shaped; fruit a capsule.

Habitat: Introduced from Eurasia, widespread from lowlands to moderate elevations.

Plant parts used: juice, leaves, flowers

Use category: Technology, Medicine, Smoking, Spiritualism

Specific uses: Technology: seeds as fish stupefier. Medicine: asthma, colds, cough (leaf infusion/decoction); warts (juice rubbed on); earache (flower oil). Spiritualism: for purification in sweat lodge. Smoking: leaves

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly.

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorus.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

***Zigadenus* spp.**

Nez Perce name:

Plant family: Liliaceae

English name: death-camas

Description: Lily-like herbaceous perennial with bulb, strap-shaped leaves, flowers small, 6 petals, yellowish- or greenish-white, in branched clusters.

Habitat: Low areas, tolerant of alkali; North America.

Plant parts used: toxic, bulbs

Use category: Toxic if eaten. Medicine

Specific uses: Technology: mashed bulbs as arrow poison. Medicine: broken bones, rheumatoid joints, sprains, boils, bruises, swellings, lameness, toothache (bulb poultice); emetic (bulb decoction).

Special preparation: Technology and Medicine: the bulbs were cooked and mashed

Underhill, J. E. 1980. Northwestern Wild Berries. Hancock House Publishers Ltd. Blaine, WA. 96 pp.

Summary: Underhill's book contains information on edibility and other uses of berries and berry-like fruits growing wild in the Northwest. It is intended for the popular audience and includes the author's subjective evaluations of flavor. Each species is illustrated with a nice color photograph.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The book does not specifically mention the Nez Perce people but does discuss indigenous berry use. It includes 29 berry-producing plants known to have been used in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Underhill, J E. (Ted).

Author category: Natural history

Background: British Columbia Park guide 1958-1982

Special interests: Wild Foods, wildflowers, mushrooms

Methodology: Field and library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (35 total)

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make then watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Berberis nervosa Pursh

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub from rhizomes; leaves pinnately compound, with holly-like leaflets with spiny margins; flowers in fragrant branched clusters, yellow, with numerous petals; fruits waxy blue-purple one-seeded berries.

Habitat: Open forests; Cascade Mountains and westward in Washington and Oregon, California.

Plant parts used: rhizomes, roots, bark, stems, fruits Use Category: Food, Technology, Medicine

Specific uses: Food: Fruits were eaten fresh. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: antimicrobial, blood tonic, to stop hemorrhage, liver ailments, digestive problems, boils and pimples.

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

Cornus canadensis Linnaeus

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.
Habitat: Moist woods from low to medium elevations; western and central North America; Asia.
Plant parts used: fruits Use Category: Food, Technology, Medicine
Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).
Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered
Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorous

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**
Plant family: Cornaceae English name: red-osier dogwood
Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.
Habitat: Riparian areas and springs from low to high elevations; Western North America.
Plant parts used: inner bark, wood, stems, leaves, fruits Use Category: Food, Technology, Medicine, Smoking; Spiritualism
Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.
Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered
Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.
Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.
Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**
Plant family: Rosaceae English name: Columbia hawthorn
Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.
Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.
Plant parts used: branches, spines, fruits Use Category: Food, Technology
Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.
Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.
Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.
Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use Category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use Category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers).

Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Lonicera utahensis* Watson**

Nez Perce name:

Plant family: Caprifoliaceae

English name: red twinberry

Description: Small to tall shrub with rounded oval leaves in pairs; flowers in pairs, pale yellow to white, with a short spur at the base and a tube flaring out to five petals; fruits paired red berries joined at the base.

Habitat: Moist spots in the mountains of western North America.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits were eaten fresh and sometimes used for an emergency source of water

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound, with toothed leaflets; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, young shoots, leaves, fruits, seeds

Use Category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Rhus radicans* Linnaeus**

Nez Perce name: **qalamtiqá**

Plant family: Anacardiaceae

English name: poison-ivy

Description: Rhizomatous clambering shrub with thick stems; leaves shiny, with three ovate leaflets with pointed tips, bright red in spring and fall; flowers yellowish, clustered at ends of stems; fruits yellow-white, persistent.

Habitat: Moist to wet places at lower elevations; US except Pacific coast; Mexico.

Plant parts used: toxic

Use Category: Contact causes skin irritation.

Special preparation: Medicine: some indigenous groups fed small amounts of leaves to children for desensitization.

Comments: Many American Indians reportedly were not sensitive to poison-ivy.

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*.

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries Use Category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits)
Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.
Other plants used in similar ways: Food: *Ribes* spp

Rosa spp.

Nez Perce name: **tá msas**
Plant family: Rosaceae English name: wild rose
Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.
Habitat: Circumboreal; moist mesic areas, moist grasslands.
Plant parts used: roots, inner bark, foliage, fruits Use Category: Food, Beverage, Medicine, Spiritualism
Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.
Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter
Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.
Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**
Plant family: Rosaceae English name: red raspberry
Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.
Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.
Plant parts used: roots, leaves, fruits Use Category: Food, Medicine
Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).
Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes
Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:
Plant family: Rosaceae English name: blackcap raspberry
Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.
Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits Use Category: Food, Technology, Medicine
Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).
Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled
Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta x'tá x**
Plant family: Rosaceae English name: thimbleberry
Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.
Habitat: Forests, open areas, lowlands to high elevations; western North America.
Plant parts used: young shoots, insect galls, leaves, fruits Use Category: Food, Beverage, Technology, Medicine
Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).
Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.
Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus spectabilis* Pursh**

Nez Perce name:
Plant family: Rosaceae English name: salmonberry
Description: Large trailing shrub with leaves of three leaflets; flowers with five magenta or pink petals; fruits resembling blackberries but salmon-colored or yellowish.
Habitat: Moist woods to wet places, lowlands to moderate elevations in the mountains; coastal western North America and disjunct in north-central Idaho.
Plant parts used: young shoots, fruits Use Category: Food
Specific uses: Food: young shoots for spring greens; fruits
Nutritional value: Fruits 1.4-35% protein, 0.8-5% fat, 9.9-59% carbohydrates. Per 100 g: 47 kcal, 30.4-371 mg vitamin C, 80 RE vitamin A, 15-225 mg calcium, 5 mg iron, 90 mg potassium, 16-191 mg magnesium, 2.6 mg sodium, 24 mg phosphorous.
Other plants used in similar ways: Fruits: *Rubus* spp.
Comments: Leaves and flowers high in vitamins and minerals.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**
Plant family: Rosaceae English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash(inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith)

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; seeds contain hydrocyanic acid.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use Category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root

decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar)

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Smilacina racemosa* (Linnaeus) Desfontaines**

Nez Perce name:

Plant family: Liliaceae

English name: false Solomon's seal

Description: Herbaceous perennial from spreading rhizomes, one-three ft. tall, with ovate parallel-veined leaves turning yellow in fall; flowers small in a dense branched cluster; fruits red "berries."

Habitat: Moist woods, riparian areas, meadows, shaded slopes; from near sea level to mid-montane; North America.

Plant parts used: roots, stems and leaves, berries

Use Category: Food, Medicine

Specific uses: Food: leafy shoots as spring greens or as flavoring with meat; fruits eaten fresh.

Medicine: stomach ailments (root decoction); skin irritations (root poultice); laxative (stems and leaves). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

Nutritional value: Fruits 1-10% protein, 0.6-3% fat, 20.7-86% carbohydrates. Per 100 g: 88 kcal, 122-508 mg vitamin C, 16-161 mg calcium, 3 mg iron, 14-57 mg magnesium, 1 mg zinc

***Streptopus roseus* Michaux**

Nez Perce name:

Plant family: Liliaceae

English name: twisted-stalk

Description: Herbaceous perennial from rhizomes; leaves ovate, parallel-veined, shiny, bases clasping the stem; flowers white, yellowish, or rose, sometimes streaked or spotted; fruits red berries.

Habitat: Streambanks, moist woods, usually above 3000 ft. elevations; western boreal North America.

Plant parts used: fruits

Use Category: Food, Medicine

Specific uses: Food: fruits eaten but not a favorite food. Medicine: tonic, stomach ailments (plant infusion); internal pains (rhizome decoction). Cosmetic: rhizomes or whole plants tied to body or to clothing for scent

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use Category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Vaccinium* spp.**

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use Category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use Category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

Walker, D. E. 1968. Conflict and Schism in Nez Perce Acculturation. Washington State University Press, Pullman. 171 pp.

Summary: Walker's book focuses on social and political aspects of acculturation and does not mention specific plants. He does discuss root-digging specialists, the First Roots and First Fruits Ceremonies, and the reluctance of the Nez Percés to abandon their traditions including the seasonal economic cycle.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Walker discusses traditions that involve plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Walker, Deward E.

Author category: Anthropology

Background: Professor of Anthropology, University of Colorado, Boulder; Associate Professor of Anthropology, University of Idaho; Ph.D. University of Oregon 1964, B.A. 196

Special interests: Native American civil liberties and rights; acculturation, religion, political, economic, and social organization of NW N Am Native Americans

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (none)

Walker, D. E. 199?. The Nez Perce Indians. Idaho Historical Society Picture Series 1: 24 plates.

Summary: This series of photographs is primarily historical. Three photographs illustrate plant use: photo 18 shows a sweat lodge made with willow branches and Great Basin wildrye stems and leaves, with a basket in the foreground; photo 22 shows a contemporary Nez Perce woman digging camas; photo 23 includes a coiled basket.

Methodology: Study and selection of photographs from historical archives

Significance to Nez Perce ethnobotany: Ethnobotany is included in this photo series as a part of the Nez Perce way of life.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Walker, Deward E.

Author category: Anthropology

Background: Professor of Anthropology, University of Colorado, Boulder; Associate Professor of Anthropology, University of Idaho; Ph.D. University of Oregon 1964, B.A. 196

Special interests: Native American civil liberties and rights; acculturation, religion, political, economic, and social organization of NW N Am Native Americans

Methodology: Study and selection of photographs from historical archives

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Leymus cinereus* (Scribner & Merrill) A. Löve**

Nez Perce name: **susé?ey**

Plant family: Poaceae

English name: Great Basin wildrye

Description: Tall coarse perennial grass in dense clumps, leaves up to 1/2 inch wide; flowers and fruits on tall stalks in a narrow spike.

Habitat: Moist places in swales, along streams, or in other moist spots in gravelly to sandy open areas, steppe to open woods, often alkaline; lowlands to moderate elevations of western and central North America.

Plant parts used: foliage

Use Category: Technology, Medicine, Spiritualism

Specific uses: Technology: larger stems for arrows; split stems for imbrication on baskets; stems/leaves for beds, floor covering, separating layers of fish for drying, roofing sweat lodges, lining and layering pit ovens, cache pits, and old-style burials; twisted into cordage or woven into mats. Medicine: internal hemorrhage, stimulating hair growth (root decoction); rheumatism (plants wrapped around limb for heating); gonorrhea (mashed root infusion). Spiritualism: in myths leaf tips used to puncture.

Special preparation: Technology: For cordage and mats, the leaves were dried and then soaked.

Comments: Formerly called *Elymus cinereus*.

Salix spp.

Nez Perce name: táxs

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use Category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Walker, D. E. 1998. Nez Perce. Pp. 420-438 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: This chapter reviews Nez Perce life during the "ethnographic period" (shortly before and after Euroamerican contact). It includes mention of some important food plants (p. 421) and two plants important in technology (because they were used to make hunting bows). Fig. 2 (p. 421) is a photograph of a Nez Perce dugout canoe, and Fig. 3 (p. 422) shows camas digging and grinding kouse in a hopper mortar.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: 17 plants important in Nez Perce culture are mentioned.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Walker, Deward E.

Author category: Anthropology

Background: Professor of Anthropology, University of Colorado, Boulder; Associate Professor of Anthropology, University of Idaho; Ph.D. University of Oregon 1964, B.A. 196

Special interests: Native American civil liberties and rights; acculturation, religion, political, economic, and social organization of NW N Am Native Americans

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

Allium spp.

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use Category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

Amelanchier alnifolia (Nuttall) Nuttall ex M. Roemer

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

Lewisia rediviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use Category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Philadelphus lewisii* Pursh**

Nez Perce name: **sisé qiy**

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use Category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers);

rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus albicaulis* Engelman**

Nez Perce name: **lalxsáway**; seed = **lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use Category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried

for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use Category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use Category: Food

Specific uses: Food: fruits

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Taxus brevifolia Nuttall

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use Category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after "hardening" in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use Category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Walker, J., and D. Pettit. 1999. Fossils, oral history tell an ancient Northwest tale. Lewiston Morning Tribune Thursday, December 23, 1999: 6A, 7A.

Summary: Interviews with Nez Perce people and archaeologists provided the core of this brief discussion of life in Nez Perce territory during the past few thousand years. The importance of camas and other root foods is mentioned, as well as the adoption of a semisedentary life.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: The significance of this article is that it describes life along the Snake River during the past several thousand years and some of the roles of plants.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Walker, Jodi

Author category: Journalism

Background: Writer, Lewiston Morning Tribune

Special interests:

Methodology: Interviews, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Ward, G. C. 1996. The West: An Illustrated History. Little, Brown and Company, Inc. Boston. 446 pp.

Summary: Ward's book is a history of the western United States beginning with early Spanish exploration and devoting attention to the "contact period," early relations and conflicts between Native peoples and Euroamerican settlers. The book was published in conjunction with the Public Broadcasting System's documentary series of the same name. Native traditions are mentioned but not discussed in depth. The Nez Perce people are one of the featured Native groups. On page 46 the authors mention the first direct encounter between the Nez Percés and Euroamericans (William Clark's advance party from the Corps of Discovery) and how the Nez Percés provided camas and allowed the Clark party to cut five trees for canoes (these were ponderosa pine). Page 79 includes a description of a Nez Perce ceremony that combined traditional practices with Christianity--vigorous dancing around a pole which may have been a ponderosa pine trunk.

Methodology: Library research, interviews

Significance to Nez Perce ethnobotany: The book is more important in documenting Nez Perce history than in providing ethnobotanical information.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Ward, Geoffrey C.

Author category: History, writer

Background: Writer of books, and screenplays for The American Experience on Public Broadcasting System, lives in New York City; formerly editor of American Heritage Magazine

Special interests: Writing for television, American history

Methodology: Library research, interviews

Context: popular interest

Specific Nez Perce plants discussed in this reference (2 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among

many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

Warren, E. S. 1916. *Memoirs of the West: The Spaldings*. Marsh Printing Company. Portland, OR. 153 pp.

Summary: Eliza Spalding Warren, daughter of Henry and Eliza Spalding compiled these reminiscences of her early life and of Nez Perce history. Pages 13-27 concern the Spaldings' life with the Nez Perce. Included are descriptions of Indians using horses to thrash their wheat and of activities associated with digging camas.

Methodology: Personal experience, library research

Significance to Nez Perce ethnobotany: Warren's memoirs include some mention of plant use.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Warren, Eliza S.

Author category: Writer

Background: Daughter of Henry and Eliza Spalding

Special interests: Southeast Columbia Plateau missions

Methodology: Personal experience, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (2 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried leaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Triticum aestivum* Linnaeus**

Nez Perce name: **peqes**

Plant family: Poaceae

English name: wheat

Description: Cultivated annual grass with flowers and fruits in dense spikes.

Habitat: Cultivated

Plant parts used: fruits

Use Category: Food

Specific uses: Food: ground for flour.

Special preparation: Food: what was gleaned from the fields and boiled until the kernels opened

Whalen, S. 1971. The Nez Perces' relationship to their land. Indian Historian 4: 30-33.

Summary: Whalen's article describes the Nez Perce view of their relationship to their physical and biological environment. The months were named in honor of nature and important phases in seasonal subsistence activities. As with many discussions of Plateau subsistence, there is more focus on animals than on plants, although plants were at least as important in Nez Perce life.

Methodology: Interviews, library research

Significance to Nez Perce ethnobotany: This paper does not mention many plants specifically; its importance lies in description of Nez Perce beliefs and values regarding their environment.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Whalen, Sue

Author category:

Background:

Special interests:

Methodology: Interviews, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (3 total)

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with "mouse-tail" bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: leaves, wood, bark, pitch

Use Category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, "striped" with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use Category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Percés it was dried or ground only by "downstream" groups

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch).

Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use Category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

Whitford, A. C. 1943. Fiber plants of the North American aborigines. Journal of the New York Botanical Garden 44(518): 25-34.

Summary: Whitford discusses indigenous North American use of plant fibers. He states that throughout the United States milkweed fibers were used far more than dogbane or nettles, but this conclusion was based on a nonrepresentative sample. The actual proportions of these plants used varied regionally.

Methodology: Museum and library research

Significance to Nez Perce ethnobotany: The paper discusses several fiber plants used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Whitford, A C.

Author category: Fiber technology

Background: Fiber Technologist, Manawul Corporation, Boston

Special interests: Native plant fibers, indigenous fiber technology

Methodology: Museum and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (9 total)

***Apocynum androseifolium* Linnaeus**

Nez Perce name:

Plant family: Apocynaceae

English name: forest dogbane

Description: Short herbaceous perennial from rhizomes, with milky sap; leaves in pairs, thickish, oval with rounded tips, margins entire; flowers pinkish, in pairs, with a tube and five flaring petals; fruits long narrow follicles, in pairs.

Habitat: Dryer forest soils and banks at low to high elevations; North America except the southeast US.

Plant parts used: stem fibers

Use Category: Technology, Medicine

Specific uses: Technology: fine cordage for basketry, hafting and binding, and nets for fishing and trapping nets. Medicine: Aphrodisiac (leaves eaten or smoked); contraceptive (root infusion).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Not as strong as *Apocynum cannabinum* because fibers shorter.

***Apocynum cannabinum* Linnaeus**

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: roots, stem fibers, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use Category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: roots, latex, stem fibers, flower buds, young fruits

Use Category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plants milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea
Nutritional value: Flowers have high sugar content.
Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.
Comments: Too much plant latex can cause severe nausea.

***Hierchloe odorata* (Linnaeus) Beauvois**

Nez Perce name:

Plant family: Poaceae

English name: sweetgrass

Description: Sweet-smelling perennial grass with narrow leaves.

Habitat: Moist soil from low to moderate elevations in the mountains of North America and Eurasia.

Plant parts used: stems and leaves

Use Category: Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Technology: in basketry for scent and decoration. Medicine: respiratory ailments, (stem/leaf infusion, inhaling smoke from leaves); coughs, sore throat, venereal disease in men (stem/leaf infusion); chapping, windburn, eyewash (soaked stems); insect repellent; saddle sores on horses (leaves); grass chewed to increase endurance. Spiritualism: incense for purification. Cosmetic: perfume, decoction/infusion for body and hair wash; grass packed into saddles or among clothes to smell good.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use Category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves;

flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use Category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g;

0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction)); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

Wilfong, C. 1990. Following the Nez Perce Trail. Oregon State University Press. Corvallis, OR. 370 pp.

Summary: This book is a road guide to the path taken by the Nez Percés in their 1877 flight and subsequent important Nez Perce routes. It opens with a very brief sketch of Nimipu life and early encounters with Euroamericans. It does describe the Joseph Band's last camas-digging expeditions as a free people (pp. 8, 74) and mentions that the site of Field Springs State Park, Washington, was an important kouse-digging area for these people (p. 44). On page 45 the author describes Joseph Cave in Asotin County, Washington, and speculates that it may be the cave where the huge stores of kouse were burned by General Howard's troops.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: The availability of root foods was an important part of the Joseph Band's connection with the land, and their activities, including root-digging, were being severely restricted even before they were forced to leave their homeland.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Wilfong, Cheryl

Author category: Independent scholar

Background:

Special interests: Nature

Methodology: Field and library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (3 total)

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

Williams, E. 1999. A historic chance to make amends? Lewiston Morning Tribune Friday April 16, 1999: 1A, 5A. Lewiston, ID.

Summary: A meeting was held 15 April 1999 between federal officials and members of the Nez Perce tribe as well as geographically adjacent tribes. Attendants discussed planned bicentennial commemorations of the Lewis and Clark expedition and Indian involvement in these events. Several Tribal representatives discussed their views on appropriate commemorations and other desirable actions. On the subject of not sharing all information with visitors, Carla HighEagle of the Nez Percés mentioned the commercialization of traditionally-important plants huckleberries and beargrass and the effects of large-scale commercial gathering on Indian gathering.

Methodology: Attendance at meeting, interviews

Significance to Nez Perce ethnobotany: Two traditionally-important plants were mentioned as examples of commercialization of natural resources.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Williams, El

Author category: Journalism

Background: Staff writer, Lewiston Morning Tribune

Special interests: Local events, background

Methodology: Attendance at meeting, interviews

Context: popular interest

Specific Nez Perce plants discussed in this reference (2 total)

Vaccinium spp.

Nez Perce name: **cemítik**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use Category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Xerophyllum tenax (Pursh) Nuttall

Nez Perce name: **yé ye**

Plant family: Liliaceae

English name: beargrass

Description: Grasslike herbaceous perennial growing in dense tussocks of tough fibrous leaves; flowers small, creamy-white, in large dense fluffy branched clusters.

Habitat: Montane slopes from lowlands to alpine areas; inland North America from British Columbia to California and Montana.

Plant parts used: leaves

Use Category: Technology

Specific uses: Technology: leaves for imbrication in basketry, mattress and saddle pad stuffing, wrapping meat to keep it clean.

Special preparation: Technology: leaves were gathered in the mountains after snowmelt, dried, split. For use they were soaked (sometimes only the base of the leaf was used).

Other plants used in similar ways: Basketry: *Phragmites australis*, *Prunus emarginata*

Williams, G. W. (in press). Aboriginal use of fire: Are there any “natural” plant communities? 52 pp. in Kay, C.E. (ed.). Utah State University Press, Logan.

Summary: Williams' paper is a thorough review of Indian burning practices in North America. He discusses effects of repeated low-intensity fires on vegetation and presents observations by early Euroamerican explorers in the West. One of these reports specifically mentions Nez Perce burning in the Blue Mountains. Improvement of berry, camas, and grass production is among the reasons for burning listed in the paper. Williams' main point is that probably ever since man has occupied North America he has used fire to manage resources. He stresses the error of the common misconception that Native Americans did not alter the landscape in which they lived.

Methodology: Library research

Significance to Nez Perce ethnobotany: This paper mentions several aspects of Native American vegetation management.

Implications for future management of Nez Perce National Historical Park lands: Williams' study documents the Nez Perce use of fire to modify plant habitats.

About the author: Williams, Gerald W.

Author category: Sociology, History

Background: US Forest Service, Washington, DC

Special interests: Fire ecology

Methodology: Library research

Context: ecological and historical

Specific Nez Perce plants discussed in this reference (8 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed

by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use Category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use Category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qapqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use Category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on mends faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Rubus idaeus* Linnaeus**

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use Category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Salix* spp.**

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: bark, wood, branches, green leaves

Use Category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use Category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.

Wilson, T. 1916. The use of wild plants as food by Indians. The Ottawa Naturalist 30(2): 17-21.

Summary: In this paper Wilson discusses coastal and interior Native peoples and their use of plants. Pit-roasting of black tree lichen is described on page 19.

Methodology: Interviews

Significance to Nez Perce ethnobotany: Plants important to the Nez Perce people are included in this paper.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Wilson, Tom

Author category: Anthropology

Background: Vancouver, B.C

Special interests: Ethnobotany

Methodology: Interviews

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (17 total)

***Allium* spp.**

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows,

also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also

used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven

2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Nicotiana attenuata* Torrey**

Nez Perce name:

Plant family: Solanaceae

English name: coyote tobacco

Description: Annual from small taproot; leaves in a *Basal rosette*; flowers white, with long narrow tube and saucer-shaped five-lobed end; fruit a capsule.

Habitat: Dry open places, usually sandy soils, low to moderate elevations, inland western US.

Plant parts used: leaves, flowers

Use category: Medicine, Smoking

Specific uses: Medicine: tonic, colds, to expel worms, emetic, skin irritations, dandruff, hair loss (leaf decoction); respiratory problems (stem/leaf infusion); tuberculosis (dried leaves smoked); swellings (crushed leaf poultice or crushed seed liniment); cuts, toothache (crushed leaf poultice). Smoking: leaves, sometimes mixed with other plants.

Special preparation: Smoking: native tobacco leaves were mixed with kinnickinick and/or red-osier dogwood.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Pachistima myrsinites*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Foot: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: "The natives eat and esteem the fruits highly" (Meehan 1897).

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or

boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Wyatt, D. 1998. Thompson. Pp. 191-202 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: Wyatt's summary of Thompson culture and history includes listings of important plants. Houses are illustrated in Figure 2 (a pit house and a tule mat tipi). Figure 3 is an interesting recent photograph of people fishing by the light of a pitch lamp and Figure 8 illustrates plant materials used in certain rituals.

Methodology: Field and library research

Significance to Nez Perce ethnobotany: Nearly all of the plants listed in this chapter were also important in Nez Perce culture.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Wyatt, David

Author category: Anthropology

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Special interests: Northern Columbia Plateau/Fraser Plateau

Methodology: Field and library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (35 total)

Allium spp.

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Amelanchier alnifolia (Nuttall) Nuttall ex M. Roemer

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Apocynum cannabinum Linnaeus

Nez Perce name: **qeemu**

Plant family: Apocynaceae

English name: dogbane, "Indian-hemp"

Description: Tall herbaceous perennial from rhizomes, often forming large colonies; stems red, plants with milky juice; leaves in pairs, entire, tips round, turning yellow in fall, flowers small, pinkish, fruits long narrow "pods" in pairs, seeds with tuft of hairs.

Habitat: Streamsides, springs, and other open wet areas at low to moderate elevations; widespread in the US, can become semi-weedy, but now uncommon in the inland Northwest, no longer in Clearwater area but was formerly abundant at Kamiah (which is named after this plant).

Plant parts used: stem fibers; roots; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: fine cordage for soft basketry, hafting, binding, and nets for fishing and trapping nets. Camas-gathering and storage bags, "cornhusk" bags, and conical hats were made from dogbane. Medicine: reducing fever, emetic, expectorant, cathartic, laxative, heart disease, venereal disease (root decoction in low doses); permanent contraception (root decoction taken during menstrual periods); venereal disease (milky sap); preventing hair loss (root decoction applied externally).

Special preparation: Technology: branches and leaves were removed and the stems were dried (sometimes they were split lengthwise before drying). Pounding the stems freed the fibers, and the bark was scraped off.

Other plants used in similar ways: Cordage: *Apocynum androsemifolium*, *Urtica dioica*

Artemisia tridentata Nuttall

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: bark, stems, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites (foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorus.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

Calochortus spp.

Nez Perce name: ló-las

Plant family: Liliaceae

English name: mariposa-tulip, sego-lily

Description: Herbaceous perennial from a bulb, gray-green strap-shaped fleshy leaves; flowers usually one per stalk, with three triangular petals, violet with green stripe on outside and blackish glandular hairs inside; fruits capsules.

Habitat: Wet meadows or moist places to drylands; from lowlands to high elevations in western North America.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: a seasonal supplement.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Celtis reticulata Torrey

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: "Gnarled" usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits.

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 "petals" and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves, green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lonicera ciliosa (Pursh) DeCandolle

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two "lips," in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits

Use category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers).

Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

Pinus albicaulis Engelmann

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: páps

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with "mouse-tail" bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking. Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction). Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was "ripe."

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: ta x'tá x

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: cimú x'cimux cimú k

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Salix spp.

Nez Perce name: **táxs**

Plant family: Salicaceae

English name: willow

Description: Shrubs or trees, deciduous, dioecious, flowers/fruits in catkins.

Habitat: Wet places; circumboreal.

Plant parts used: wood, branches, green leaves, bark

Use category: Technology, Medicine

Specific uses: Food: inner bark. Technology: roots or wood for fire drills and hearths; bark for coarse waterproof cordage; wood for firewood, to smoke fish or meat; branches for cradleboard hoops, support in camas-baking pits, sweathouse frames, bows, fish traps, weirs, net frames and lashings, cooking skewers, snowshoes, foundation coil for boiling or berry baskets, hide stretchers, gambling sticks, willow wheel and pole game; leaves to pad moccasins. Medicine: pain, fever, inflammation, cuts, diarrhea, dysentery, summer flu (bark infusion); induce vomiting to eliminate bile which was thought to be weakening (twigs inserted down throat); eyewash (leaf infusion).

Special preparation: Technology: inner bark was split and twisted for cordage. Medicine: inner bark was crushed into powder

Sambucus cerulea Rafinesque

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

Scirpus acutus Muhlenberg ex Bigelow

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction); hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes,

cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

***Viburnum edule* (Michaux) Rafinesque**

Nez Perce name:

Plant family: Caprifoliaceae

English name: squashberry, highbush cranberry, moosewood viburnum

Description: Tall shrub with leaves in pairs; leaves soft, often notched at tips to form three lobes, margins serrate; flowers small, white, in dense umbrella-shaped clusters; fruits scarlet berry-like drupes.

Habitat: Montane forests of boreal North America to northern Oregon, Idaho, and Colorado.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: fruits. Technology: hollowed stems for pipe stems.

Special preparation: Food: fruits were gathered in autumn, usually after frost, and eaten fresh or boiled and mixed with oil. Sometimes they were dried for storage, but the fruits remain on the plants during winter and could be eaten directly.

Nutritional value: Fruits 0.1% protein, 0.4% fat, 9.4% carbohydrates. Per 100 g: 39 kcal, 13.4 mg vitamin C, 6 RE vitamin A, 24 mg calcium, 11 mg magnesium, 23 mg phosphorous.

Comments: Fruits are tart and were one of the valuable winter foods since they remain on the branches.

Wynecoop, D. C. 1969. Children of the Sun: A History of the Spokane Indians. Published by the Author. Wellpinit, WA. 80 pp.

Summary: Written by a Spokane Indian, this book summarizes the history of the Spokane people beginning with the arrival of Euroamerican fur traders. Chapter One describes Spokane life before Euroamerican contact, including a list of important Spokane plant foods (page 12). The book is rich in information and includes photographs, maps, drawings, and reproductions of documents. Page 74 includes the story "Coyote and the Spring at Plante's Ferry," which warns about touching poison-ivy.

Methodology: Oral history, interviews, library research

Significance to Nez Perce ethnobotany: The plants used by the Spokane people were largely the same ones used by the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Wynecoop, David C.

Author category: Spokane tribal member

Background: Wellpinit, WA. A clinic has been established in his memory, in Wellpinit

Special interests: Spokane culture and history

Methodology: Oral history, interviews, library research

Context: popular interest

Specific Nez Perce plants discussed in this reference (35 total)

Allium spp.

Nez Perce name: **sé x**

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear.

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were eaten in small quantities.

Amelanchier alnifolia (Nuttall) Nuttall ex M. Roemer

Nez Perce name: **kel** or **kikéye**

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: inner bark, wood, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx, seeds = wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: **qiqétqiqet**

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: roots, rhizomes, bark, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Perces preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Cirsium undulatum* (Nuttall) Sprengel**

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

Cornus sericea Linnaeus var. sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: inner bark, wood, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

Fragaria virginiana Duchesne

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat "seeds" on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: roots, stems, leaves, seeds

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Opuntia polyacantha* Haworth**

Nez Perce name: ?*ístis*

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, spines, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out. Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Philadelphus lewisii* Pursh**

Nez Perce name: *sisé qiy*

Plant family: Hydrangeaceae

English name: mock-orange, syringa

Description: Large shrub, leaves in pairs, with three main veins, in pairs, flowers white, four petals, very fragrant, fruits capsule.

Habitat: Moist mesic areas, coulees, draws, watercourses, talus slopes, and rocky slopes of lowlands to high elevations; northwestern US and adjacent Canada to northern California.

Plant parts used: wood, leaves, flowers

Use category: Technology, Medicine

Specific uses: Technology: wood for digging sticks, bows, handles, spear shafts, arrow shafts, hair combs, berry combs, *pipe stems*, spits to smoke eels, fish spears, reinforcement in snowshoes, hooks for hopper mortars, awls, clubs, breast plate armor; leaves/flowers for soap. Medicine: tonic, sore chest, hemorrhoids, eczema (stem/leaf decoction, sometimes with flowers); rheumatism, sores, swellings (powdered wood charcoal with pitch or grease, or powdered leaves); swellings, skin poultice, (dried, crushed leaves with grease); soap (bark or leaves frothed with water); infected breasts (bruised leaf poultice).

Other plants used in similar ways: Wood: *Amelanchier alnifolia*, *Cercocarpus ledifolius*, *Crataegus douglasii*, *Holodiscus discolor*, *Taxus brevifolia*.

Comments: Blooming mock-orange plants indicated groundhogs were fat.

***Pinus albicaulis* Engelman**

Nez Perce name: *lalxsáway*; seed = *lalak*

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: inner bark, pitch, branches, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, pitch, wood, leaves, cones, seeds

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone "hearts" for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Populus balsamifera* Linnaeus var. *trichocarpa* (Torrey & Gray ex Hooker) Brayshaw**

Nez Perce name: qápqap

Plant family: Salicaceae

English name: black cottonwood

Description: Tall dioecious colonial tree with light wood and gray-white bark; winter buds large, sticky; leaves triangular, sticky; flowers and fruits in catkins.

Habitat: Streamsides, poorly drained areas, moist forests, lowlands to moderate elevations; western North America.

Plant parts used: roots, bark, wood, buds, leaves, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: inner bark and sap for spring food. Technology: root for fire drill; bark for large storage baskets, roofing, lining food storage pits; inner bark for soap, scouring pads; sap to conceal human scent; wood for dugout canoes, containers, saddle frames, fishing weirs, firewood, smoking buckskin; buds for yellow coloring; bud scale resin as adhesive; leaves for stuffing mattresses; seed fluff for pillows and mattresses. Medicine: colds (bark eaten); tuberculosis, pain, inflammation, fever, whooping cough, ruptures, childbirth recovery (inner bark infusion); ringworm (poultice of buds mashed with resin); bandages, poultice for sore muscles, bruises, maggot infestations in horses (leaves); sores (leaf or resin poultice or inner bark infusion); skin irritations (leaf poultice or inner bark infusion); broken bones (wood decoction with other plants); venereal disease (bud/young shoot infusion with other plants).

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc.

Other plants used in similar ways: Food and Medicine: *Populus tremuloides*.

Comments: Trembling leaves when there is no wind signal approach of bad weather. Formerly called *Populus trichocarpa*.

***Populus tremuloides* Michaux**

Nez Perce name: nisá·qapqap

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: bark, wood

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism:

branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Prunus virginiana* Linnaeus**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Ribes* spp.**

Nez Perce name:

Plant family: Grossulariaceae

English name: currants and gooseberries

Description: Shrubs, sometimes prickly, with lobed leaves and tubular to saucer-shaped flowers; fruits berry-like.

Habitat: Woods, riparian areas, washes, moist places, various elevations.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Nutritional value: Fruits 1% protein, 0.3% fat, 14.6% carbohydrates. Per 100g: 59 kcal, vitamin C, 91 mg calcium, 0.9 mg iron, 83 mg phosphorous, 613 mg potassium, 29 mg magnesium, 83 mg phosphorous.

Comments: Ribes seeds are high in gamma-linoleic acid.

Rosa spp.

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers usually pink, five petals, fruits "hips" which remain on bushes all winter.

Habitat: Circumboreal; moist mesic areas, moist grasslands.

Plant parts used: roots, inner bark, foliage, fruits

Use category: Food, Beverage, Medicine, Spiritualism

Specific uses: Food: fruits eaten but not a favorite food. Beverage: brewed for tea. Technology: inner bark for yellow coloring agent; wood for arrow shafts, cradleboard hoops, handles; leaves over and under food in cooking baskets to flavor, keep from burning. Medicine: roots to reduce swelling, stop nosebleed, treat sore throat, syphilis, for women after childbirth; bark or flower infusion for sore eyes. Spiritualism: foliage to keep away ghosts. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

Rubus idaeus Linnaeus

Nez Perce name: **he?ilpé?ilp**

Plant family: Rosaceae

English name: red raspberry

Description: Prickly vine/shrub with prickly compound leaves of three leaflets; flowers white, with five petals; fruits red.

Habitat: Wet to dry woods, open mountain slopes, often rocky, lowlands to moderate elevations; temperate North America; Eurasia.

Plant parts used: roots, leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic, diarrhea, constipation (branch decoction); stomach ailments root or branch decoction; spitting blood, vomiting (leaf decoction).

Special preparation: Food: the fruits were collected in summer and eaten fresh or sometimes cooked and dried in cakes.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 15.8% carbohydrates. Per 100 g: 65 kcal, 22-35 mg vitamin C, 13 RE vitamin A, 36 mg calcium, 1 mg iron, 38 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

Rubus leucodermis Douglas

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rubus ursinus* Chamisso & Schlechtendal**

Nez Perce name: **cimú xcimux cimú k**

Plant family: Rosaceae

English name: Pacific blackberry

Description: Prickly trailing vine; leaves prickly, compound with three leaflets; flowers with five white or pale pink petals; fruits black drupelets.

Habitat: Open areas and open to dense woodlands, lowlands to moderate elevations; western North America from British Columbia to northern California and sporadically east to Idaho.

Plant parts used: leaves, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruit juice. Technology: fruits for red or purple coloring in basketry.

Special preparation: Food: fruits were gathered during June and July and eaten fresh or mashed and dried in cakes. Beverage: fruits or leaves were brewed into tea.

Nutritional value: Fruits 1.5-3.2% protein, 0.3-6% fat, 13-72% carbohydrates. Per 100 g: 55-57 kcal, 15-201 mg vitamin C, 26-353 mg calcium, 4 mg iron, 81-145 mg potassium, 13-133 mg magnesium, 0.3-1.3 mg manganese.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue "berries."

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as "pipes" to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Shepherdia canadensis* (Linnaeus) Nuttall**

Nez Perce name:

Plant family: Elaeagnaceae

English name: buffaloberry, soapberry

Description: Shrub with thick leaves in pairs, leaves silvery beneath with brown dots; flowers small, with four petals; fruits orangish bitter berries.

Habitat: Forests or meadowy places at various elevations in boreal North America.

Plant parts used: roots, bark, stems/leaves, fruits

Use category: Food, Beverage, Medicine, Spiritualism, Confection

Specific uses: Food: fruits eaten fresh or dried. Beverage: fruit juice; alcoholic drink from fermented fruits. Medicine: tonic (root or bark decoction, stem/leaf infusion), purgative (root decoction); digestive or heart ailments (bark decoction or fruits eaten fresh or juice drunk); gallstones, sedative (fruits eaten fresh or juice drunk); diarrhea, eyewash (bark decoction);

hypertension, , dandruff, laxative (stem/leaf infusion); gonorrhea (stem/leaf infusion with mountain-balm); broken bones (stem/leaf infusion with willow and cottonwood. acne or boils (fruit juice as wash). Spiritualism: stem/leaf infusion drunk in sweat lodge for purification; leafless branch infusion for good luck and to wash hunting gear. Confection: fruit juice whipped into a frothy confection.

Special preparation: Food: fruits were not hand-picked because they are too soft; they were collected on mats after the branches were beaten. For drying the fruits were placed in baskets with hot rocks, then spread out to air-dry. Dried fruits were cooked in grease or beaten in water until the liquid became foamy. The foam was then sweetened with serviceberries (now sugar).

Nutritional value: Fruits 1.8% protein, 0.7% fat, 6.6% carbohydrates. Per 100 g: 72 kcal, 16 mg calcium, 8 mg magnesium, 21 mg phosphorous, 1.4 mg zinc.

Other plants used in similar ways: Food: *Shepherdia argentea*

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: ?ala?á la

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Perces collected these berries on high mountain ridges.

Yanovsky, E. K., E.K. Nelson, and R.M. Kingsbury. 1932. Berries rich in calcium. Science 75(1952): 565-566.

Summary: Chemical analysis of hackberry fruits showed that they are rich in calcium [mostly from the seeds].

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The plant analyzed is not the same hackberry species as that in Nez Perce territory, but the chemical composition would be similar. The analysis strongly suggests that hackberries were an important calcium source in the Nez Perce diet.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Yanovsky, Elias K.

Author category: Organic chemistry

Background: Chemist, Carbohydrate Research Division, USDA Bureau of Chemistry and Soils; Chemist, USDA Bureau of Agricultural and Industrial Chemistry; Research Chemist Norwalk Tree & Rubber Co.; Bloomfield Laboratories, NJ. Ph.D. 1913 Clark, AM 1912; BS St. Petersburg, Russia

Special interests: Food Chemistry

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (none):

Yanovsky, E. K. 1936. Food Plants of the North American Indians. USDA Miscellaneous Publication 237. Washington, DC. 68 pp.

Summary: This is a compilation of published information about Native American food plants. The plants are arranged by family and then alphabetically by genus. For each plant an example is given of its use.

Methodology: Library research

Significance to Nez Perce ethnobotany: Many important Nez Perce plants are included in this summary.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Yanovsky, Elias K.

Author category: Organic chemistry

Background: Chemist, Carbohydrate Research Division, USDA Bureau of Chemistry and Soils; Chemist, USDA Bureau of Agricultural and Industrial Chemistry; Research Chemist Norwalk Tree & Rubber Co.; Bloomfield Laboratories, NJ. Ph.D. 1913 Clark, AM 1912; BS St. Petersburg, Russia

Special interests: Food Chemistry

Methodology: Library research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (106 total):

***Abies grandis* (Douglas ex D. Don) Lindley**

Nez Perce name: **pícpic**

Plant family: Pinaceae

English name: grand fir

Description: Large coniferous tree with flat fruity-scented needle-like leaves which have two white stripes on the underside; cones upright on the branches, disintegrating with the central axis remaining on the branch; seeds winged.

Habitat: Montane slopes throughout the Northwest US and up to 7000 ft. elevation in the Rocky Mountains.

Plant parts used: boughs, bark, decayed wood, pitch, leaves

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark eaten by some groups. Technology: bark for roofing, decoction for black coloring or as deodorant; boughs for mattresses, sitting, floor covering, burned in the sweathouse; branches for fish net poles, spear poles, tipi poles; rotten wood for tanning hides. Medicine: tonic (tea from young shoots); digestive ailments, gonorrhea (strong decoction of bark, pitch, or sapwood); coughs, sore throat, bruises, sprains (bark infusion); gastrointestinal ulcers, colds, appetite stimulation, cuts, sores, goiter (pitch ointment); gonorrhea (strong decoction of bark, pitch, or sapwood); eyewash (bark, pitch, or leaf infusion); baby powder (pulverized leaves). Spiritual protection: boughs.

Special preparation: Medicine: the pitch was often mixed with marrow or suet for a poultice. Bruised leaves were boiled for an eyewash or dried and pulverized for baby powder.

Other plants used in similar ways: Spiritualism: *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp., *Symphoricarpos albus*

Agastache urticifolia* (Bentham) Kuntze var. *urticifolia

Nez Perce name:

Plant family: Lamiaceae

English name: nettleleaf horsemint

Description: Robust somewhat ill-smelling (but minty) plant with square stems, soft leaves in pairs, leaf margins serrate; flowers white or pinkish, tubular, in a dense terminal cluster.

Habitat: Open places at least vernal moist, from lowlands to high elevations; widespread in inland western North America.

Plant parts used: leaves

Use category: Medicine

Specific uses: Medicine: to treat colds (leaf infusion), induce sweating, reduce fever in babies (leaves placed in blankets), expel intestinal gas, as mild sedative.

Special preparation: Beverage: brewed into a tea

***Allium acuminatum* Hooker**

Nez Perce name:

Plant family: Liliaceae

English name: tapertip onion

Description: Strong-scented herbaceous perennial from small bulbs; leaves narrow, with veins paralleling margins; flowers rose-purple to white, in umbrella-shaped clusters.

Habitat: Dry soils at low to moderate elevations; western North America south of Vancouver Island.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Allium geyeri* S. Watson**

Nez Perce name: sé x

Plant family: Liliaceae

English name: marsh onion

Description: Strong-scented herbaceous perennial from fibrous-coated bulbs; leaves narrow, with veins paralleling margins; flowers pinkish, in umbrella-shaped clusters.

Habitat: Wet meadows and streamsides; inland western U.S. and South Dakota.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: flavoring, condiment, supplemental food.

Special preparation: Food: bulbs were collected in spring and usually boiled or steamed. Sometimes they were dried for storage.

Other plants used in similar ways: Food: *Allium* spp

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or

sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to 'break' grain and prevent their warping.

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

Angelica spp.

Nez Perce name:

Plant family: Apiaceae

English name: angelica

Description: Large herbaceous perennial from thick taproot; leaves one-three times compound, with enlarged stalks clasping the stem; flowers small, white, in umbrella-shaped clusters; fruits in pairs, dry, flat and thin, winged.

Habitat: Moist to wet places at various elevations in North America and northern Asia.

Plant parts used: leaves and roots

Use category: Food, Medicine, Technology

Specific uses: Food: young shoots as green vegetable, leaves as seasoning. Technology: toy whistles and blowguns, breathing tubes when hiding underwater in times of danger, gambling talisman. Medicine: antispasmodic, poultice to reduce inflammation (roots).

Comments: Plant can be confused with water-hemlock.

Arctostaphylos nevadensis A. Gray

Nez Perce name:

Plant family: Ericaceae

English name: pinemat manzanita

Description: Low evergreen shrub-vine with thick leathery leaves with pointed tips; flowers pinkish, urn-shaped; fruits bright red-orange berries.

Habitat: Woods and meadows of inland mountains of Washington, Oregon, and California.

Plant parts used: berries, leaves

Use category: Food, Medicine, Smoking

Specific uses: Food: fruits. Medicine: astringent, antimicrobial (leaf tea). Smoking: leaves.

Special preparation: Food: fruits were eaten raw or cooked. Smoking: leaves were dried.

Other plants used in similar ways: Food: *Arctostaphylos uva-ursi*. Smoking: *Arctostaphylos uva-ursi*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*

Comments: Berries are tart and rather mealy, when fried they pop open.

Arctostaphylos uva-ursi (Linnaeus) Sprengel

Nez Perce name: hotó to

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: berries, leaves

Use category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as

protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture.

Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried.

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

Artemisia ludoviciana* Nuttall var. *ludoviciana

Nez Perce name:

Plant family: Asteraceae

English name: western mugwort

Description: Sagebrush-scented gray-white herbaceous plant from spreading rhizomes; leaves lobed near the tip; flowers in tiny head that are in dense terminal branched clusters.

Habitat: Moist places, streamsides, or dryish sandy to rocky soils, lowlands to foothills in inland western North America and eastern Canada.

Plant parts used: stems and leaves

Use category: Medicine, Insect repellent, Spiritualism

Specific uses: Technology: plant burned during first smoking of hides; deodorant in saddles, pillows, hide bags, moccasins. Medicine: indigestion, colds, fever, tuberculosis, throat constriction, rheumatism (plant infusion); influenza (hot plant decoction); wounds, bruises, sores, blisters, nosebleed, arthritis, helping broken bones set (poultice); disinfectant (plant burned). Insect repellent: plant burned. Spiritualism: plant burned as smudge to drive away bad spirits and as a purifier, leaves used to cover floor in sweat lodge, plants used to wipe sweat in sweat lodge; good luck charm; other spiritual uses. Confection: leaves chewed. Cosmetic/adornment: leaves in moccasins for foot deodorant.

Special preparation: Medicine: plants were used fresh or dry to repel insects and brewed into tea to take internally

***Artemisia tridentata* Nuttall**

Nez Perce name: **qémqem**

Plant family: Asteraceae

English name: big sagebrush

Description: Shrub with shreddy fibrous bark and grayish-green leaves, leaf tips three-lobed; flowers in tiny heads, heads in branched clusters, blooming in late summer.

Habitat: In dry areas of deep loamy soils at low to high elevations; inland western and middle North America.

Plant parts used: stems, bark, leaves

Use category: Technology, Fuel, Medicine, Spiritualism

Specific uses: Technology: bark strips used for textiles (mats, bags, clothing, shoes, saddle blankets), as bedding, to stuff moccasins, for tinder; twisted tightly into a slow match for transporting a flame; stems for fuel, twined for quivers; branches burned to fumigate house or boiled for washing solution; dead twigs or wood for fire drill; firewood, smoking hides. Medicine: leaves are bacteriostatic; indigestion (leaves chewed), stomach cramps (leaf decoction), diarrhea (foliage decoction); colds, pneumonia, tuberculosis (leaves placed into nostrils or steam inhaled from leaf and/or root infusion/decoction); coughs, fever, sore throat, tonsillitis (foliage decoction, sometimes gargled); headache (fresh leaf poultice); toothache (leaf poultice); cuts, sores, wounds (leaf decoction for antiseptic wash, or foliage poultice); inflamed eyes (poultice of steeped leaves); aches and pains (hot foliage poultice); antidote to poison (leaves chewed or leaf decoction drunk); soothing ant bites

(foliage decoction applied externally). Spiritualism: bark placed on floor of sweat lodge. Leaves stuffed in nostrils to combat bad smells.

Special preparation: Technology: bark strips were twisted into cordage. Medicine: leaves were placed in the nostrils and inhaled, or drunk as an infusion. A strong tea was drunk cold to induce sweating during colds.

Other plants used in similar ways: Textiles: *Carex pellita*, *Apocynum cannabinum*

***Asclepias speciosa* Torrey**

Nez Perce name: **kam ma**

Plant family: Asclepiadaceae

English name: milkweed

Description: Colonial herbaceous perennial from rhizomes, plants with milky juice; leaves ovate, in pairs, gray-hairy; flowers with reflexed petals, pink to red-purple; fruits large warty-spiny follicles, seeds flat, with a tuft of hairs at the tip.

Habitat: Moist spots in sandy to loamy soils, roadsides at lower to moderate elevations of inland western and central North America.

Plant parts used: flower buds, young fruits, latex, stem fibers, roots

Use category: Food, Technology, Medicine, Confection, Cosmetic

Specific uses: Food: young shoots and flower buds. Technology: stem fibers for cordage, especially for fish nets; seed fluff to absorb menstrual flow or as diapers. Medicine: tonic (root decoction); stomachache, bloody diarrhea, headache, snakebite contraceptive (root decoction); rheumatism (mashed root poultice); sores, corns, calluses (milky sap); skin antiseptic (milky sap); swellings (mashed root poultice). Confection: milky sap chewed. Cosmetic: milky sap as face cream.

Special preparation: Food: flower buds were usually boiled, and immature seeds were eaten raw. Confection: the plant's milky sap was dried for chewing. Technology: stems were dried and the fibers pounded out. Medicine: roots were dried and brewed into medicinal tea.

Nutritional value: Flowers have high sugar content.

Other plants used in similar ways: Chewing gum: *Hieracium albiflorum*, *Microseris nutans*.

Comments: Plant latex can cause severe nausea.

***Balsamorhiza hookeri* Nuttall**

Nez Perce name:

Plant family: Asteraceae

English name: rock balsamroot

Description: Herbaceous perennial from a fleshy taproot, leaves in a *Basal rosette*, deeply lobed, flowers in sunflower-like heads with golden yellow rays.

Habitat: Steppe or open shrubland in shallow dry rocky soils at low to high elevations; inland western North America.

Plant parts used: root

Use category: Food, Medicine

Specific uses: Food: An occasional food. Medicine: stomach or bladder ailments (root decoction).

Special preparation: Food: the roots were pit roasted.

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza incana* Nuttall**

Nez Perce name: **cilíix**

Plant family: Asteraceae

English name: hoary balsamroot

Description: Silky white-hairy herbaceous perennial from a taproot; leaves in a *Basal rosette*, lobed, flowers in sunflower-like heads with yellow rays.

Habitat: In dryish meadows and slopes; low to mid montane, southeast Washington, northeast Oregon, Idaho, southeast Montana, western Wyoming.

Plant parts used: root

Use category: Food

Specific uses: Food: A supplementary food, eaten raw or sometimes stored.

Special preparation: Food: the roots were boiled or baked, or sometimes eaten raw

Other plants used in similar ways: Root food: *Balsamorhiza sagittata*

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: pásx, seeds = wa'wit

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root; young flower stalks; seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; 'seeds' eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ('seeds' eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The 'seeds' were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes.

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; 'Seeds': *Helianthus annuus*

Berberis aquifolium* Pursh var. *aquifolium

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: Oregon-grape

Description: Evergreen shrub with shiny pinnately-compound leaves, leaflets with spiny margins; flowers in fragrant clusters, bright yellow, with five petals; fruits waxy-purple berries.

Habitat: Open forests and sagebrush steppe; lowlands to high elevations; Washington and Oregon Cascades and westward, British Columbia., northern Idaho.

Plant parts used: roots/rhizomes, stems, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring. Medicine: blood tonic (root/rhizome bark decoction, stem infusion, or fruits eaten); tuberculosis, kidney ailments, syphilis (root/rhizome decoction); arthritis/rheumatism (root/rhizome decoction, taken internally or as external wash); eyewash (stem/bark infusion); stomach ailments (root/rhizome decoction or stem tip decoction); fever, to stimulate involuntary muscles, eyewash (root decoction); antimicrobial (stems); laxative (fruits eaten).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Nutritional value: Fruits high in vitamin C.

Other plants used in similar ways: Coloring: *Alnus incana*

***Berberis aquifolium* Pursh var. *repens* (Lindley) H. Scoggan**

Nez Perce name: qiqétqiqet

Plant family: Berberidaceae

English name: creeping Oregon-grape

Description: Low-growing evergreen shrub from rhizomes; leaves compound, with holly-like leaflets with spiny margins; flowers in dense clusters, bright yellow; fruits waxy-blue berries.

Habitat: Open woods, mesic slopes, in deep soils of foothills and lower mountains; inland western North America.

Plant parts used: rhizomes, roots, bark, stems, fruits Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark of rhizomes/roots/stems for bright yellow to brown coloring (rhizomes/roots). Medicine: blood tonic; stomach ailments, to stop hemorrhage (rhizome/root decoction); coughs, rheumatism, contraceptive, venereal disease (rhizome/root infusion); fever (rhizome/root bark decoction); kidney ailments (rhizome/root decoction or berry infusion); boils and pimples (berry poultice or rhizome/root infusion); antiseptic (rhizome/root poultice or infusion applied externally).

Special preparation: Food: fruits gathered during late summer and eaten fresh or mashed, shaped into cakes, and dried for storage if other kinds of fruit were scarce. Beverage: fruits crushed for a drink. Technology: rhizomes and shredded bark were boiled for coloring.

Other plants used in similar ways: Coloring: *Alnus incana*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: ho póp

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves.

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Calochortus elegans* Pursh**

Nez Perce name: ló łas

Plant family: Liliaceae

English name: cat's-ear

Description: Small herbaceous perennial from a bulb, with one flat narrow *Balsamorhiza sagittata* leaf, flowers with three white petals usually with a purple crescent.

Habitat: Grassy slopes and open forests in the mountains; Northwest US and northern California.

Plant parts used: bulb

Use category: Food

Specific uses: Food: a seasonal supplement.

Special preparation: Food: the bulbs were dug in summer and boiled.

Other plants used in similar ways: Food: *Triteleia grandiflora*.

Comments: Bulbs are small and deep in the soil.

***Calochortus macrocarpus* Douglas**

Nez Perce name: ló łas

Plant family: Liliaceae

English name: sagebrush mariposa-tulip

Description: Herbaceous perennial from a bulb, with two flat narrow leaves, flowers with three pinkish-lavender petals with a conspicuous purple blotch.

Habitat: Dry places at low to moderate elevations of inland western US and southern British Columbia.

Plant parts used: bulbs, flower buds

Use category: Food, Medicine

Specific uses: Food: bulbs, flower buds. Medicine: poison-ivy, sore eyes (bulb poultice).

Special preparation: Food: bulbs were eaten raw or pit roasted. Flower buds were eaten raw.

Other plants used in similar ways: Food: *Triteleia grandiflora*, *Fritillaria pudica*

Camassia quamash (Pursh) Greene

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

Carex spp.

Nez Perce name:

Plant family: Cyperaceae

English name: sedge

Description: Herbaceous grass-like perennials with usually triangular stems, leaves in three rows; flowers unisexual and with no petals.

Habitat: Usually in moist to wet places including standing water, but sometimes in dry sand; widespread.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology

Specific uses: Food: stems of some species eaten for a fresh vegetable. Technology: cordage, matting.

Special preparation: Technology: rhizomes or stems/leaves were dried, then soaked and twisted into cordage or mats

Cellis reticulata Torrey

Nez Perce name: **katámno**

Plant family: Ulmaceae

English name: hackberry

Description: 'Gnarled' usually small trees with stiff rough-surfaced ovate leaves with three main veins; fruits red-brown to purple, berrylike; seeds distinctively reticulate.

Habitat: Open, often rocky areas, usually along rivers or in side canyons; inland western US.

Plant parts used: fruits, wood

Use category: Food, Technology

Specific uses: Food: fruits. Technology: wood for snowshoes, side arms of gig spear trident.

Special preparation: Food: fruits were gathered in summer and crushed and dried, including the pits.

Nutritional value: Fruits (especially stones) rich in calcium

Comments: Formerly called *Celtis douglasii*

Chenopodium spp.

Nez Perce name:

Plant family: Chenopodiaceae

English name: goosefoot

Description: Annual herbaceous plants with inconspicuous green flowers and shiny black seeds.

Habitat: Disturbed areas, dry to mesic areas, low to moderate elevations.

Plant parts used: foliage, seeds

Use category: Food

Specific uses: Food: potherb, flour from seeds.

Nutritional value: Foliage 30-45 kcal per 100g, 0-5.7% protein, 0.8% fat, 7.3% carbohydrates. Per 100 g: 10-80 mg vitamin C, 0-310 mg calcium, 0-5.2 mg iron, 0-75 mg phosphorous, also rich in vitamin A

Chimaphila umbellata (Linnaeus) Barton var. occidentalis (Rydberg) Blake

Nez Perce name:

Plant family: Ericaceae

English name: pipsissewa

Description: Low rhizomatous evergreen subshrub with more or less woody stems bearing whorls of shiny dark green leathery leaves; flowers pink, with five petals, in a terminal cluster of one to five; fruits capsules.

Habitat: Circumboreal in coniferous woods south to California, Colorado, and eastern US; Eurasia.

Plant parts used: roots, leaves

Use category: Beverage, Medicine, Smoking

Specific uses: Beverage: roots, stems, and leaves boiled. Medicine: blood tonic (root/leaf infusion or whole plant decoction); colds, tuberculosis, fever, urinary tract problems, rheumatism, general indisposition, astringent, eyewash (root/leaf infusion); swellings, especially of legs and feet (fresh plant poultice); childbirth aid (plant chewed, or leaf infusion/decoction). Smoking: leaves in smoking mix.

Special preparation: Beverage: the plants were boiled for a refreshing cold drink.

Nutritional value: 0.7% protein. Per 100 g: 100 mg calcium, 1 mg iron, 93 mg potassium, 37 mg magnesium, 15 mg phosphorous

Cirsium undulatum (Nuttall) Sprengel

Nez Perce name:

Plant family: Asteraceae

English name: wavy thistle

Description: Native herbaceous perennial thistle from short rhizomes; lower leaves densely woolly; flowers pale purple, in dense spiny head.

Habitat: Open dry places on well-drained soils; western and central US, British Columbia.

Plant parts used: roots, stems

Use category: Food

Specific uses: Food: roots.; young stems and greens eaten like asparagus.

Special preparation: Food: roots were dug in late summer to autumn, peeled, and pit-cooked or boiled. Sometimes they were dried and stored, then soaked, chopped and used in stew.

Nutritional value: Inulin.

Other plants used in similar ways: Food: *Cirsium scariosum*, *Frasera fastigiata*

Claytonia lanceolata Pursh

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits.

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Claytonia megarhiza* (A. Gray) Parry ex S. Watson**

Nez Perce name:

Plant family: Portulacaceae

English name: alpine springbeauty

Description: Small succulent herbaceous perennial from a fleshy taproot; leaves in large rosettes, spatula-shaped, delicate; flowers white to deep pink.

Habitat: Gravelly soils, rock crevices, talus, montane inland western North America.

Plant parts used: root

Use category: Food

Specific uses: Food: an occasional food.

Other plants used in similar ways: Food: *Claytonia lanceolata*

***Claytonia perfoliata* Donn ex Willdenow**

Nez Perce name:

Plant family: Portulacaceae

English name: miners-lettuce

Description: Succulent annual with heart-shaped leaves, often red, two upper leaves clasping the stem just beneath the flower cluster; flowers small, white, with five petals; seeds shiny, black.

Habitat: Vernal moist open areas, springs, and shaded spots such as beneath sagebrush canopies; western North America from lowlands to low mountains.

Plant parts used: stems, leaves

Use category: Food, Medicine

Specific uses: Food: greens. Medicine: rheumatism (soothing poultice); eyewash, laxative (plant infusion).

Nutritional value: 2.8% protein, 0.3% fat, 3.2% carbohydrates. Per 100 g: 20 kcal, 29 mg vitamin C, 109 RE vitamin A, 52 mg calcium, 2.9 mg iron, 317 mg potassium, 40 mg magnesium, 18 mg sodium, 79 mg phosphorous.

Other plants used in similar ways: Food: *Urtica dioica*.

Comments: Tender and sweet at all stages of growth.

***Cornus canadensis* Linnaeus**

Nez Perce name:

Plant family: Cornaceae

English name: bunchberry

Description: Trailing subshrub to 6 inches tall; leaves whorled at top of stem; flowers tiny, clustered in the center of four white petal-like bracts; fruits bright red, berry-like, in a cluster.

Habitat: Moist woods from low to medium elevations; western and central North America; Asia.

Plant parts used: fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: red coloring agent. Medicine: antidote to poison or insanity (chewed); sores (powdered toasted leaves or leaf ash).

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: leaves were toasted or burned, then powdered.

Nutritional value: Fruits 0.6% protein, 0.8% fat, 16.6% carbohydrates. Per 100 g: 52 kcal, 2.1 mg vitamin C, 4 RE vitamin A, 52 mg calcium, 12 mg magnesium, 19 mg phosphorous

Cornus sericea* Linnaeus var. *sericea

Nez Perce name: **piplá c**

Plant family: Cornaceae

English name: red-osier dogwood

Description: Shrub with red stems and leaves in pairs, leaves ovate, entire, with curving veins; flowers small, greenish-white, in dense clusters; fruits blue or white, berry-like.

Habitat: Riparian areas and springs from low to high elevations; Western North America.

Plant parts used: wood, inner bark, stems, leaves, fruits

Use category: Food, Technology, Medicine, Smoking; Spiritualism

Specific uses: Food: fruits; wood chips as salty seasoning. Technology: bark for cordage, lashings; wood for bows; branches for arrows, cradleboard hoops, frames of cylindrical basketry traps, spatulas, twisted into fishnets or fish traps; old branches to smoke hides; sap to poison arrowheads. Medicine: tonic, laxative, wash for skin ulcers (bark infusion/decoction); digestive ailments (stem decoction including other plants); to stimulate circulation, childbirth recovery (bark/wood/leaf infusion); colds (bark infusion, stem decoction, or smoking bark mixed with kinnickinick or tobacco); liver ailments (bark infusion), bathing babies to make them strong and good-natured (stem decoction); poison-ivy (stem decoction); scalp problems (wood/bark decoction). Smoking: bark or sometimes leaves in tobacco mixture. Spiritualism: bark included in religious bundles.

Special preparation: Food: fruits were eaten fresh or cooked and were sometimes dried for winter. Smoking: bark strips or leaves were powdered.

Nutritional value: Fruits 8.9-12 mg vitamin C per 100 g.

Other plants used in similar ways: Smoking: *Arctostaphylos uva-ursi*.

Comments: Reportedly the pure white fruits are less bitter than the blue ones. Some groups ate the fruit stones like nuts. Formerly called *Cornus stolonifera*.

***Crataegus columbiana* T. Howell**

Nez Perce name: **télx**

Plant family: Rosaceae

English name: Columbia hawthorn

Description: Large shrub-small tree with long stout thorns, ovate leaves, white five-petaled flowers in clusters, and dark red fruits.

Habitat: Moist to mesic places and along rivers at low to moderate elevations; inland Northwest US and adjacent Canada.

Plant parts used: branches, spines, fruits

Use category: Food, Technology

Specific uses: Food: fruits formerly gathered in large quantities (fresh or dried) but later regarded as a famine food. Technology: branches for digging sticks, ax or dipnet handles, drying meat, pins for holding mats on tipis; thorns as awls, pins, fishhooks, probes.

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus douglasii*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black 'berries'.

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart

tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant.

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Epilobium angustifolium* Linnaeus**

Nez Perce name:

Plant family: Onagraceae

English name: fireweed

Description: Tall unbranched herbaceous perennial from rhizomes; with many narrow leaves and a long pyramidal cluster of rose-purple flowers; flowers with four petals; fruits long narrow capsules; seeds with a tuft of hairs at the tip.

Habitat: Open places including burned areas, lowlands to high mountains; North American and Eurasia.

Plant parts used: young shoots, stems, leaves

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots. Beverage: leaves used for tea. Technology: stem fibers extracted for cordage; flowers rubbed on rawhide thongs and mittens to waterproof.

Medicine: boils (leaf poultice), sores (plant decoction externally). Spiritualism: leaves placed in cooking pits to protect food.

Special preparation: Food: young stems were cut, peeled, leaves stripped off, and the inner tissue was eaten fresh or occasionally cooked. Fibers remaining were used to make cordage. leaves were dried for tea.

Nutritional value: peeled stems 0.2% protein, 0.3% fat, 4% carbohydrates. Per 100 g: 4 RE vitamin A, 32 mg calcium, 20 mg magnesium, 31 mg phosphorous.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*.

Comments: Shoots are rich in vitamin C and beta-carotene. Flowering of fireweed indicated it was time to hunt deer.

***Equisetum laevigatum* A. Braun**

Nez Perce name: **sáyxsayk**

Plant family: Equisetaceae

English name: smooth scouring-rush

Description: Stiff herbaceous rhizomatous perennial with more or less hollow thin whorled branches, leaves reduced to black-tipped teeth which are deciduous; reproducing by spores borne in cones.

Habitat: Wet areas, often on flood plains or along streams, lowlands to mid-elevations in the mountains; western North America from British Columbia to Baja California.

Plant parts used: rhizomes, stems, cones

Use category: Food, Technology, Medicine, Toys

Specific uses: Food: cones (probably young). Technology: stems for scouring, sandpaper, whistles, as tubes to give medicine to infants. Medicine: diuretic, astringent, respiratory problems, rheumatism, backache, sluggishness due to a cold (stem infusion); bleeding (poultice); venereal disease (plant decoction with *Pachistima myrsinites*); poison-ivy (pounded stems mixed with water); burns (poultice of plant ash and grease); sore eyes (fluid from stems); acceleration of childbirth (rhizome decoction), expelling afterbirth (stem decoction/infusion).

Nutritional value: High in calcium.

Other plants used in similar ways: Polishing: *Equisetum arvense*, *Equisetum hyemale*, *Equisetum palustre*

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with 'pinched' tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in 'pudding.' Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ('The natives reckon the root unfit for food.' Land C journals).

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fragaria vesca* Linnaeus**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: woods strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves yellow-green, compound, with three toothed veiny leaflets, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.

Habitat: Moist-mesic places, meadows, streamsides, open forests, from lowlands to mid elevations; North America and Europe.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Medicine, Cosmetic

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).

Cosmetic: fruits as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Other plants used in similar ways: Food: *Fragaria virginiana*

***Fragaria virginiana* Duchesne**

Nez Perce name: **téxtex**

Plant family: Rosaceae

English name: blueleaf strawberry

Description: Herbaceous perennial spreading by runners, no upright stems, leaves compound, with three flat toothed leaflets, bluish-green, flowers white, five petals, fruits red, fleshy, with tiny flat 'seeds' on the outside.

Habitat: Moist open forests and meadows, streamsides (mostly inland), from lowlands to mid elevations; western North America.

Plant parts used: whole plant, fruits

Use category: Food, Beverage, Technology

Specific uses: Food: fruits. Beverage: fruits, leaves, and flowers in tea. Medicine: dysentery, diuretic, astringent (whole plant infusion); diarrhea (whole plant infusion, root infusion, or leaf decoction, sores (poultice of powdered leaves in grease); sore mouth (leaf powder).
Cosmetic: fruits or leaves as underarm deodorant; runners braided into belts and headbands for girls.

Special preparation: Food: fruits were gathered in summer and usually eaten fresh. In the past they were mashed and dried in years of abundant production. Dried cakes were eaten without further preparation or were soaked to make a sauce or added to other foods.

Nutritional value: 33-56% mg vitamin C.

Other plants used in similar ways: Food: *Fragaria vesca*

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stfme x**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry.

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Geum triflorum* Pursh**

Nez Perce name:

Plant family: Rosaceae

English name: prairie-smoke

Description: Softly hairy herbaceous perennial from thick rhizomes; leaves pinnately compound, in pairs, leafstalk bases enlarged and clasping stem; flowers cream-colored tinged red, bell-shaped, usually in a cluster of three; fruits dry, with long feathery tip.

Habitat: Moistish meadows at low to high elevations in inland western US and southern Canada.

Plant parts used: roots, seeds

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: roots. Medicine: tonic (dried crushed leaves mixed with other medicines, or root infusion/decoction); colds, influenza, fever, vaginal yeast infection, to stimulate appetite (root infusion), coughs (plant infusion); wash for pain (root decoction); rheumatism, aching/stiff/sore joints and muscles (plants in sweat bath); sores, skin irritations (salve of root infusion and grease); disinfectant (plant infusion after purifying sweat bath; body stiffness (root decoction as wash); flesh wounds (root infusion, root infusion in salve with grease); sore throat, canker sores (root infusion); clearing sinuses (scraped roots smoked with tobacco); eyewash (root decoction); aches and pains (decoction as body wash in sweathouse). Spiritualism: decoction as body wash in sweathouse for purification; root infusion as love potion. Cosmetic: seeds for perfume.

Special preparation: Beverage: the roots were boiled or brewed for tea. Cosmetic: the seeds were crushed

***Helianthus annuus* Linnaeus**

Nez Perce name:

Plant family: Asteraceae English name: wild sunflower
Description: Branching annual, rough-hairy, leaves in pairs at least below, heart-shaped, flowers in heads with golden-yellow rays and brown centers, fruits achenes.
Habitat: Moist, mesic, or dry open areas in the lowlands and foothills; native in western US and weedy elsewhere.
Plant parts used: leaves, flowers, fruits Use category: Food, Medicine
Specific uses: Food: young stems as vegetable; seeds fresh or dried and prepared. Medicine: rheumatism (plant decoction as warm wash); sores, swellings (powdered leaf poultice, with or without grease).
Special preparation: Food: sunflower 'seeds' were pounded into meal and fried in fat, then shaped into small round sunflower cakes. They might also be parched, pulverized, and the meal stored.
Nutritional value: Flowers 11.4% protein, 1.7% fat, seeds 28% protein, 50% fat, 19% carbohydrates. Per 100 g: 580 kcal, 20 mg calcium, 1.8 mg copper, 7.1 mg iron, 690 mg potassium, 350 mg magnesium, 2 mg manganese, 3 mg sodium, 840 mg phosphorous, 5.1 mg zinc.
Other plants used in similar ways: 'Seeds': *Balsamorhiza sagittata*.
Comments: Seeds valuable due to oil content.

***Heracleum lanatum* Michaux**

Nez Perce name: ?ayc ?ayc
Plant family: Apiaceae English name: cow-parsnip
Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, 'striped' with oil tubes.
Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.
Plant parts used: stems, leaves, roots, seeds Use category: Food, Technology, Medicine, Spiritualism
Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.
Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire.
Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.
Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.
Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

Hydrophyllum capitatum* Douglas var. *capitatum

Nez Perce name:
Plant family: Hydrophyllaceae English name: waterleaf
Description: Rather succulent hairy herbaceous perennial with fleshy fibrous roots; leaves pinnately compound and toothed; flowers purple, in a dense coiled cluster.
Habitat: Vernal moist soils, lowlands to moderate elevations; widespread in inland Northwest US.
Plant parts used: roots, foliage, flower clusters Use category: Food, Medicine
Specific uses: Food: spring greens, roots. Medicine: skin irritations (plant poultice).

Special preparation: Food: the roots were dug in spring and boiled or steamed

***Juniperus communis* Linnaeus**

Nez Perce name:

Plant family: Cupressaceae

English name: common juniper

Description: Low (often prostrate) dioecious shrub with stiff, pointed, awl-like leaves that are conspicuously white on their lower surfaces; cones berry-like, waxy-bluish.

Habitat: In more or less dry rocky soil of meadows and open woods, low to high elevations; North America.

Plant parts used: cones

Use category: Beverage, Medicine, Spiritualism

Specific uses: Beverage: tea from branches. Medicine: lung problems, contraceptive, venereal disease (cone decoction); colds, tuberculosis (bark/leaf infusion); kidney ailments, diuretic (cones eaten, branch decoction); tonic, stomach ailments, heart medicine, high blood pressure, aching muscles, eyewash (branch infusion). Spiritualism: used in sweathouse during winter; branch decoction for protective body wash.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture.

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

***Larix occidentalis* Nuttall**

Nez Perce name: **kimíle**

Plant family: Pinaceae

English name: western larch, tamarack, hackmatack

Description: Large deciduous conifer with narrow, rather soft linear leaves which turn golden-yellow and then orange in autumn; cones small, with 'mouse-tail' bracts; seeds small, winged.

Habitat: Forests, disturbed areas including burns and swampy places in the foothills to moderate elevations in the mountains; southern inland western Canada and the northwestern US.

Plant parts used: leaves, wood, bark, pitch

Use category: Technology, Medicine, Cosmetic, Confection

Specific uses: Food: inner bark sometimes eaten, sweet syrup made from sap or hardened sap chewed. Technology: wood for bows, bowls; decayed wood to smoke buckskin; bark for red coloring. Medicine: colds, cough, sore throat, tuberculosis (bark infusion, pitch poultice or infusion); peptic ulcers, to stimulate appetite, birth control, to stimulate appetite, birth control after childbirth (bark/chopped branch infusion/decoction); cough, tuberculosis, cancer (leaf infusion); respiratory ailments, sores, cuts, burns, broken bones (pitch poultice, often with grease or tallow); blood tonic (foliage decoction, sometimes with Oregon-grape); antiseptic wash or soak, cancer (foliage decoction); arthritis (foliage decoction externally or internally); cleansing wounds, washing babies (bark decoction). Confection: hardened pitch chewed for gum. Cosmetic: pitch to hold hair in place; powdered pitch for red face paint.

Special preparation: Beverage: to collect sap, a place was hollowed in the trunk and the sap allowed to evaporate to concentrate the sugars. Medicine: the young leaves were boiled for tea.

Nutritional value: Rich in vitamin C

***Ledum groenlandicum* Oeder**

Nez Perce name:

Plant family: Ericaceae

English name: bog-laurel

Description: Medium shrub with entire linear leathery leaves, leaf margins curled under, lower leaf surface densely rusty-hairy; flowers white, in dense clusters.

Habitat: Bogs and swamps at low to high elevations in northern North America.

Plant parts used: stems/leaves

Use category: Beverage, Medicine

Specific uses: Beverage: tea. Medicine: kidney ailments, mild stimulant (leaf/twig infusion); poison-ivy, eyewash (leaf infusion/decoction).

Special preparation: Beverage and medicine: leaves gathered in summer, dried and brewed.

Nutritional value: 4.2% protein, 0.7% fat. Per 100 g: 98 mg vitamin C, 215 mg calcium, 2.4 mg copper, 184 mg iron, 93 mg phosphorous, 73 mg magnesium, 45 mg manganese, 3.7 mg sodium, 2.4 mg zinc

***Lewisia redeviva* Pursh**

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried

bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly 'a single oz of dried root gave sufficient/nourishment for a full meal' (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and 'planting' it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

***Linum perenne* Linnaeus**

Nez Perce name:

Plant family: Linaceae

English name: wild blue flax

Description: Perennial with a dense cluster of many thin, woody-based unbranched stems; linear; flowers pale to bright blue, with five petals; fruits capsules.

Habitat: Meadowy places at various elevations throughout western North America.

Plant parts used: whole plant, stem fibers

Use category: Technology, Medicine, Cosmetic

Specific uses: Technology: stem fibers for cordage, warp of mats, mesh of snowshoes, fishnets, basketry. Medicine: digestive ailments, eyewash (stem/leaf/flower decoction); liver ailments, swellings, goiter (stem/leaf or leaf poultice). Cosmetic: whole plant for hair rinse or washing skin.

Other plants used in similar ways: Cordage: *Apocynum cannabinum*, *Urtica dioica*

***Lomatium ambiguum* (Nuttall) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: swale biscuitroot

Description: Herbaceous perennial from taproot usually with ball-shaped tuber(s); leaves divided into linear segments up to five-6 mm wide; flowers small, yellow, in umbrella-shaped clusters; fruits dry, flat, winged, in pairs.

Habitat: Open areas at low to moderate elevations, inland western US.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: tubers as a staple; flowers/young leaves as a seasoning. Medicine: colds, sore throat (young leaf/flower infusion).

Special preparation: Food: tubers were ground into flour

***Lomatium canbyi* (Coulter & Rose) Coulter & Rose**

Nez Perce name: **qeqí t**

Plant family: Apiaceae

English name: Canby biscuitroot

Description: Low herbaceous perennial with round tuberous root and finely divided green leaves; flowers in dense round clusters, white; fruits in flat pairs, 'striped' with oil tubes.

Habitat: Rocky areas and shallow soils at lower elevations; localized, in central-eastern Washington, eastern Oregon, Idaho, and northern California.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: this was the favorite Nez Perce early root food.

Special preparation: Food: tubers were dug in early spring (late March-early April), boiled fresh, and peeled. Among the Nez Perces it was dried or ground only by 'downstream' groups.

Nutritional value: Tubers 1-10% protein, 2-3% fat, 85% carbohydrates (0-2% sugars, 12-42% starch). Per 100 g: 130-500 mg calcium, 10-200 mg iron, 170-200 mg magnesium, 1600 mg phosphorous, 1-8 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium cous* (S. Watson) Coulter & Rose**

Nez Perce name: **qá msit** (qaws = any dried lomatium)

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, 'striped' with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or 'fingerprint' balls, or patties. Sometimes cous was smoked during drying.

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*

***Lomatium dissectum* (Nuttall) Mathias & Constance var. *multifidum* (Nuttall) Mathias & Constance**

Nez Perce name: **titálam**; shoots = **?í cis**; upper root = **i cus**

Plant family: Apiaceae

English name: fernleaf lomatium

Description: Herbaceous perennial with large woody taproot, leaves very finely divided, flowers in dense round clusters, usually yellow (sometimes brown); fruits in flat pairs, 'striped' with oil tubes.

Habitat: Open mesic or rocky slopes and dry meadows, usually in deep soils, lowlands to moderate elevations; western US and adjacent Canada.

Plant parts used: root, shoots, mature foliage

Use category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young shoots as fresh spring greens; spring roots as emergency food.

Technology: roots put in water to stupefy fish or drinking animals, mixed with brains for tanning leather. Medicine: blood tonic (shoots); strengthening tonic, colds, flu, coughs, arthritis, rheumatism, dandruff, to stimulate appetite (root infusion); tuberculosis (root infusion/decoction); sinus ailments (roots smoked with tobacco); sores (root poultice or oil rubbed on); disinfectant, sore back, sprains, broken bones, boils, burns, bruises (root poultice); swellings (root poultice or decoction externally); eyewash (root oil); insect repellent; (root); distemper in horses (root smoke inhaled); reviving horses (steam inhaled); ticks/lice on horses (plant tops rubbed on or infusion used as wash). Spiritualism: ground roots burned for incense.

Special preparation: Foods: young shoots were collected in early spring, sometimes before they emerge above ground. Roots were dug in spring, peeled, and pit roasted for 1-2 days. Sometimes they were dried for winter. The upper portion of the root was not eaten. Medicine: root dried and ground, used wet for a poultice, brewed for tea, burned for insect repellent.

Other plants used in similar ways: Horse Medicine: *Clematis hirsutissima*.

Comments: The roots are large but rather fibrous. Purple shoots, mature tops, mature roots, and strong infusions/decoctions were considered poisonous.

***Lomatium farinosum* (Hooker) Coulter & Rose**

Nez Perce name: **laqáptat**

Plant family: Apiaceae

English name: Coeur d'Alene lomatium

Description: Small herbaceous perennial with globose tuberous root; leaves narrowly divided; flowers tiny, white, in dense umbrella-shaped clusters; fruits in dry pairs, 'striped' with oil tubes.

Habitat: Rocky slopes and shallow soils, lowlands to moderate elevations; extreme eastern Washington to western Montana.

Plant parts used: tuberous root

Use category: Food

Specific uses: Food: roots were a seasonal dietary supplement.

Special preparation: Food: roots were dug in late spring, peeled, and sometimes cooked with bitterroot.

Nutritional value: Tubers 2.95-8% protein, 1% fat, 89% carbohydrates. Per 100 g: 200-760 mg calcium, 5-7 mg iron, 20-56 mg magnesium.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant was actually preferred to *L. cous* but was scarce.

***Lomatium macrocarpum* (Nuttall ex Torrey & Gray) Coulter & Rose**

Nez Perce name:

Plant family: Apiaceae

English name: potato biscuitroot, 'Indian-potato'

Description: Low herbaceous perennial with large tuberous root and finely divided grayish-green leaves; flowers in dense round clusters, white; fruits in flat pairs, 'striped' with oil tubes.

Habitat: Open dry rocky areas, shallow soils, lowlands to foothills; inland western North America.

Plant parts used: tuberous root

Use category: Food, Technology, Medicine

Specific uses: Food: roots. Technology: foliage as cradleboard padding. Medicine: colds, influenza, bronchitis (soaked dried roots chewed); weakness (root infusion); infertility (roots eaten); mouth sores in babies (root poultice); horse distemper (root decoction or root smoke inhaled).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh or cooked. They were dried for storage and trade.

Nutritional value: Tubers 2.2-4% protein, 1-2% fat, 43.5-89% carbohydrates. Per 100 g: 190 kcal, 80-165 mg calcium, 10-22 mg iron, 13-37 mg magnesium, 0.8-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia redeviva*.

Comments: Root tubers sometimes very large but not favored as much as some other *lomatiums*.

***Lomatium triternatum* (Pursh) Coulter & Rose**

Nez Perce name: péqiy

Plant family: Apiaceae

English name: nineleaf *lomatium*, 'Indian celery'

Description: Herbaceous perennial with fleshy but narrow taproot, leaves with long linear divisions in three's; flowers yellow, in dense round clusters that are on stalks in umbrella-shaped clusters; fruits in flat pairs.

Habitat: Meadowy slopes to lithosols, disturbed areas, lowlands to moderate elevations; western inland US and adjacent Canada.

Plant parts used: shoots, root, flowers, fruits

Use category: Food, Medicine

Specific uses: Food: roots; young shoots as early spring greens, supplementary vegetable; flowers in pemmican; flowers and young leaves sometimes eaten. Technology: fruits as deodorant for hide tanning. Medicine: chest problems (root/leaf infusion); colds, sore throat (young leaf/flower infusion); avoiding sideaches on distance runs (fruits chewed).

Special preparation: Food: roots were dug in spring, peeled, and eaten fresh, boiled, or roasted. Young shoots were gathered in spring, peeled, and eaten raw or cooked. Young shoots and flowers dried for seasonings. Medicine: plants boiled and liquid drunk.

Nutritional value: 7% protein.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*.

Comments: Especially important source of vitamin C in spring.

***Lonicera ciliosa* (Pursh) DeCandolle**

Nez Perce name:

Plant family: Caprifoliaceae

English name: orange honeysuckle

Description: Twining deciduous woody vine with somewhat succulent opposite ovate stalkless leaves with rounded tips; flowers bright reddish-orange, with a long narrow tube and five petals arranged in two 'lips,' in clusters at stem tip with two fused leaves forming a cup at the base of the flower cluster. Fruits small red berries. Pollinated by hummingbirds.

Habitat: Forested areas at moderate elevations of northwest U.S., California, and British Columbia.

Plant parts used: stems, fruits Use category: Food, Technology, Medicine, Confection

Specific uses: Food: fruits eaten fresh. Technology: vines for lashings, pliable ladders, to reinforce suspension bridges; stem fibers as cordage, thread (usually mixed with other plant fibers).

Medicine: tonic (peeled stem decoction); epilepsy (stem infusion or flowers sucked); sterility in women (decoction of cooked stems); insomnia (vine pieces under pillow). Confection: flower spurs sucked by children for nectar. Cosmetic: boiled stems for hair stimulant.

Other plants used in similar ways: Cordage: *Clematis ligusticifolia*

***Lonicera involucrata* Banks ex Sprengel**

Nez Perce name:

Plant family: Caprifoliaceae

English name: black twinberry

Description: Small to large shrub with pairs of oval leaves pointed at the tips; flowers yellow, bell-shaped, in pairs with red leaflike bracts below the pair; fruits black berries, in pairs.

Habitat: Moist to wet spots at low to high elevations in western North America.

Plant parts used: bark, stems/leaves, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits eaten only a few at a time. Technology: bark strips in weaving clothing; fruits for blue/purple coloring. Medicine: tonic, sore throat, bladder ailments, childbirth recovery (stem/leaf infusion/decoction); stomach ailments, chest ailments, emetic (fruit infusion); broken bones, swellings, scabs, sores, itches, tired feet, as liniment (leaf poultice or stem/leaf infusion externally).

Special preparation: Food: fruits were dried and stored for winter use

***Microseris nutans* (Geyer) Schultz-Bipontinus**

Nez Perce name:

Plant family: Asteraceae

English name: nodding microseris

Description: Small herbaceous perennial from fleshy taproot, with milky juice, leaves long and narrow, flowers in yellow heads, dandelion-like, fruits with narrow scales at the top.

Habitat: Moist open places from moderate to high elevations, western interior US and British Columbia.

Plant parts used: root, milky sap

Use category: Food, Confection

Specific uses: Food: roots. Confection: milky sap chewed

***Mimulus guttatus* DeCandolle**

Nez Perce name:

Plant family: Scrophulariaceae

English name: monkeyflower

Description: Succulent herbaceous perennial with round-oval short-stalked leaves in pairs; flowers butter-yellow, two-lipped, often withered dots or blotches; fruits delicate capsules.

Habitat: Wet places, lowlands to high mountains in western US.

Plant parts used: foliage

Use category: Food, Medicine, Spiritualism

Specific uses: Food: Fresh or cooked greens; flavor enhancer. Medicine: skin irritations, wounds, rope burns (soothing poultice); chest or back soreness (stem/leaf decoction). Spiritualism: charm.

Other plants used in similar ways: Medicine: *Goodyera oblongifolia*.

Comments: Foliage has salty taste.

***Nepeta cataria* Linnaeus**

Nez Perce name:

Plant family: Lamiaceae

English name: catnip

Description: Herbaceous strongly scented perennial from a taproot; leaves soft, round-toothed, in pairs; flowers in dense terminal clusters, white.

Habitat: Introduced from Europe, weedy, disturbed areas.

Plant parts used: stems, leaves, flowers

Use category: Medicine

Specific uses: Medicine: soothing digestive tract, mild laxative, colds, to strengthen babies (infusion/decoction).

Nutritional value: 83 mg vitamin C per 100g

***Nuphar polysepalum* Engelmann**

Nez Perce name: **sá slaqs**

Plant family: Nymphaeaceae

English name: yellow waterlily

Description: Aquatic herbaceous perennial with very large fleshy rhizomes; leaves thick and shiny, floating on the surface or emergent; flowers *bright yellow, with broad thick petals*, conspicuous strap-shaped stamens, large leathery flask-shaped fruits, and seeds 1/5 in. long.

Habitat: Quiet ponds and lakes from lowlands to rather high elevations in western North America.

Plant parts used: rhizomes, stalks, leaves, seeds

Use category: Food, Medicine

Specific uses: Food: rhizomes, seeds. Medicine: gastrointestinal ulcers (rhizomes chewed); rheumatism, sore back (mashed rhizome infusion externally); treating illness, cuts, and sores in horses (rhizomes and stalks); toothache (stalk section on tooth); skin infections, swellings, bites (leaf poultice).

Special preparation: Food: rhizomes were boiled or dried and ground to thicken soups.

Sometimes they were sliced and dried like apples. Seeds were toasted like popcorn.

Comments: Obtained through trade.

***Opuntia polyacantha* Haworth**

Nez Perce name: **?ístis**

Plant family: Cactaceae

English name: prickly-pear cactus

Description: Succulent cactus with flattish fleshy pads and spines--both long, stout and short, barbed; flowers large, with many yellow or pink petals; fruits rounded-cylindric, turning red.

Habitat: Dry rocky slopes, lowlands to moderate elevations; inland western North America.

Plant parts used: roots, pads, fruits, spines

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: roots, pads, fruits. Technology: spines for piercing, fishhooks. Medicine: diarrhea (pad infusion); backache, sores, infections (crushed pads as poultice). Cosmetic: seeds as beads for necklaces.

Special preparation: Food: the pads were pit-cooked and their skin peeled off, or the spines were singed off before the pads were baked in coals and the inner tissue squeezed out.

Fruits were eaten raw.

Comments: Can cause intestinal gas.

***Paeonia brownii* Douglas ex Hooker**

Nez Perce name:

Plant family: Paeoniaceae

English name: wild peony

Description: Succulent herbaceous perennial up to one ft. tall, with grayish-green leaves divided into relatively broad segments; flowers one-two inches across, with five brown, reddish, or purplish petals; fruits dry follicles.

Habitat: Moistish places of sagebrush steppe to ponderosa pine forests, at low to moderate elevations in the inland western US.

Plant parts used: seeds, roots

Use category: Medicine

Specific uses: Medicine: digestive, kidney, or lung ailments, venereal disease, eyewash, liniment (root decoction); sore throat (root decoction gargled); heart ailments (roots chewed); cough (root decoction or seed infusion); cuts, sores, burns, wounds (powdered roots); boils,

deep cuts or wounds (root poultice); increasing horse's speed and endurance (chewed seeds placed briefly in horse's mouth)

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal.

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Phragmites australis* (Cavanilles) Trinicus ex Steudel**

Nez Perce name: **toyqí ks**

Plant family: Poaceae

English name: reedgrass, 'common reed'

Description: Tall coarse perennial grass with long runners, thick strong hollow stems, flowers and fruits in a feathery plume.

Habitat: Wet areas, including alkali, lowlands to moderate elevations; southern Canada and US.

Plant parts used: upright stems, shoots, leaves, sap

Use category: Food, Technology, Medicine, Cosmetic, Confection

Specific uses: Food: young shoots eaten fresh, seeds. Technology: stems to make rigid mats, *pipe stems*, arrow-shafts, split for shiny white basketry imbrication. Medicine: emetic (plant decoction); relief of pneumonia symptoms (sap). Confection: sap and aphid 'honey' collected as a sweet by some groups. Cosmetic: stem sections for beads in necklaces and on dress fringes.

Special preparation: Technology: the leaves were dried, soaked, and split for basketry.

Nutritional value: Shoots 5.2% protein, 0.9% fat, 89% carbohydrates.

Other plants used in similar ways: Basketry: *Prunus emarginata*, *Xerophyllum tenax*.

Comments: Leaves commonly used in imbrication of cedar baskets.

***Pinus albicaulis* Engelm**

Nez Perce name: **lalxsáway; seed = lalak**

Plant family: Pinaceae

English name: whitebark pine

Description: Coniferous tree or krumholtz shrub with silvery-white bark; needle-like leaves in clusters of five; cones purple, not opening without heat, seeds large, wingless.

Habitat: Rocky places and mountain ridges, high elevations (at or near timberline); from the Cascade Mountains eastward to northeast Oregon, Idaho, Montana, and northern Nevada.

Plant parts used: seeds, inner bark

Use category: Food

Specific uses: Food: inner bark eaten fresh; seeds stored for winter and also used as a trade item.
Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten. Cones were gathered from late summer-fall and put in the fire to open them or pounded to extract the seeds (these cones do not open naturally). Seeds were shaken out and roasted, sometimes crushed and mixed with fruit. Seeds might also be parched and pounded into flour used for mush.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Eating too many raw seeds could cause constipation.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter.

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Pinus monticola* Douglas ex D. Don**

Nez Perce name: **sé ysey**

Plant family: Pinaceae

English name: white pine

Description: Tall straight coniferous tree with graceful branches; leaves needlelike, flexible, bluish-green, in clusters of five; cones pendant, without prickles, papery.

Habitat: Moist valleys to somewhat dry slopes from lowlands to 6000 ft elevation; Rocky, Cascade, and Olympic Mountains and Sierra Nevada.

Plant parts used: wood, bark, branches, pitch, young shoots, bark, pitch, cones

Use category: Food, Technology, Medicine

Specific uses: Food: seeds. Technology: bark strips for baskets, small canoes, blankets; wood for spoons; branches for tipi poles and other dwelling frames, travois; pitch for adhesive, caulking, torches; cones to start fires. Medicine: any illness (bough infusion); stomach ailments, tuberculosis (bark infusion); kidney ailments, coughs, rheumatism, boils (young shoots). Confection: pitch chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried

for winter. Green cones were put in the fire to open them and the partially roasted seeds were eaten.

Nutritional value: Leaves rich in vitamin C.

Other plants used in similar ways: Food: *Pinus contorta*, *Pinus ponderosa*

***Pinus ponderosa* Miller**

Nez Perce name: **lá qa**; inner bark = **cuké ymit**

Plant family: Pinaceae

English name: ponderosa pine

Description: Large coniferous tree with leaves long, needle-like, in clusters of three, triangular in cross-section; cones prickly, three-four in. long, stalk and base of cone usually not falling off branch; seeds winged.

Habitat: Dryish forests where precipitation is above about 15 inches annually, low to moderate elevations; widespread in western US and British Columbia.

Plant parts used: inner bark, wood, seeds, leaves, pitch

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic, Confection

Specific uses: Food: inner bark, often as a treat or emergency food, seeds. Technology: outer bark for shelters, starting fires, fuel; trunks for dugout canoes, construction; wood for fuel and for hearth to make fires; upper branches for pipe stems; wood for smoking buckskin; twigs for twirling sticks for fire-making; pitch for adhesive, caulking, waterproofing moccasins, fishnets, twine, and other items; leaves for pillows, mattresses, roof insulation, separating layers of stored food and insulating storage pits, layered under drying cooked berries; as tinder, in more recent times for basketry; cones for smoking skins; cone 'hearts' for fire drills. Medicine: stomach ailments; influenza, dandruff (young leaves); internal bleeding, high fever (foliage decoction); muscle pain (boughs in sweat lodge); rheumatism, backache, inflamed eyes, chapped skin, earache, to open abscesses and boils, to help babies sleep (pitch with grease or tallow); eyewash (dried bud infusion, pitch decoction); earache (warmed pitch); to help deliver the placenta (heated leaves); dandruff (leaves poked into scalp); sick babies (foliage infusion externally); wounds and sores in horses (pitch poultice). Spiritualism: leaves for incense or spread on floor of sweat house to combat witchcraft, cleansing agent; smoldering cones to stop rain. Cosmetic: upper branch decoction for hair rinse, skin conditioner, leaves as deodorant (poked into flesh). Confection: pitch, young pollen cones, or green buds chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter. Seeds were eaten fresh, parched in ashes, or boiled. Technology: trunks were burned out and smoothed for canoes.

Nutritional value: Leaves 3.1% protein, 4.5% fat, 40% carbohydrates. Per 100 g: 385 RE vitamin A, 166 mg calcium, 6.8 mg iron, 1.6 mg manganese, 70 mg phosphorous. Rich in vitamin C.

Other plants used in similar ways: Food: *Pinus albicaulis*, *Pinus contorta*, *Pinus monticola*. Canoes: *Thuja plicata*.

Comments: Bark fires cooled quickly and enemies could not tell how long ago camp was broken.

***Polygonum bistortoides* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: bistort

Description: Herbaceous perennial from short thick rhizomes; leaves on long stalks in a basal cluster; flowers small, cream-colored, in a dense thick raceme at the tip of a more or less leafless upright stem.

Habitat: Montane streambanks, wet meadows, and bogs, moderate to high elevations in western North America.

Plant parts used: root, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: roots, seeds. Technology: foliage to separate layers of camas in roasting pit. Medicine: sores, boils, astringent (root poultice).

Special preparation: Food: roots were roasted, and seeds were eaten whole or ground into flour.
Nutritional value: Rich in vitamin C

***Populus tremuloides* Michaux**

Nez Perce name: **nisá qaqqap**

Plant family: Salicaceae

English name: quaking aspen

Description: Colonial dioecious trees with white bark; heart-shaped leaves with stalks flattened at right angles to the plane of the blade; flowers and fruits in catkins.

Habitat: Draws, streambanks, lakeshores, toe of lava flows, wet to dryish meadows and slopes, lowlands to subalpine; circumboreal.

Plant parts used: wood, bark

Use category: Technology, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: inner bark as spring food. Technology: bark for cordage; wood for firewood, shelters; bark or moistened leaves for toy whistles. Medicine: heartburn, childbirth aid, general discomfort, ruptures (inner bark infusion); cough, pain, inflammation, fever, ruptures (inner bark); colds, burns (leaves); sores, swellings (wood ashes with grease); eyewash (young shoot infusion); upset stomach, rheumatism (stem/branch decoction internally or externally); venereal disease (inner bark infusion, branch decoction, root decoction). Spiritualism: branch decoction to protect against witches; bark decoction to wash human scent from hunters and hunting equipment, rubbed on adolescents' bodies for purification. Smoking: inner bark in smoking mixtures. Cosmetic: powdery bark coating as deodorant, antiperspirant, to prevent underarm or facial hair growth in adolescents, wood ashes rubbed on men's faces to prevent hair growth.

Special preparation: Food: in late spring-early summer bark was peeled from the tree and the inner tissues were scraped off.

Nutritional value: cambium/inner bark 1.3% protein. Per 100 g: 90-112% mg vitamin C, 684 mg calcium, 130 mg potassium, 53.1 mg magnesium, 1.8 mg sodium, 17 mg phosphorous.

Other plants used in similar ways: Food and Medicine: *Populus balsamifera* ssp. *trichocarpa*.

Comments: The bark was not eaten as often as cottonwood bark. Catkins and leaf buds are high in vitamin C.

***Potentilla glandulosa* Lindley**

Nez Perce name:

Plant family: Rosaceae

English name: sticky cinquefoil

Description: Herbaceous glandular perennial with hairy pinnately-compound leaves; flowers yellow, with five petals, buttercup-like; fruits dry, in a dense cluster, resembling tiny beans.

Habitat: Moist to dry meadows, shrub steppe, open forests, lowlands to high elevations; western North America.

Plant parts used: whole plant, leaves

Use category: Medicine

Specific uses: Medicine: tonic(whole plant infusion); stimulant (whole plant infusion or weak leaf decoction)

***Prunus emarginata* (Douglas ex Hooker) Walpers**

Nez Perce name: **tims**

Plant family: Rosaceae

English name: bitter cherry

Description: Tree (sometimes shrublike) with small ovate toothed leaves, bitter bark; flowers white, five petals, in small clusters, fruits small black cherries.

Habitat: Mountain forests, shrub steppe, lowlands to high elevations; western North America from British Columbia south.

Plant parts used: bark, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: fruits. Technology: bark for cordage (e.g. for fishing weirs, reinforcement of suspension bridges), mats, imbrication in basketry, bindings, bow handgrips, decoration of bows and implements; wood for fuel. Medicine: acid stomach (fruits eaten); to wrap splints

for broken limbs (bark); eyewash (bark infusion); to prevent fetus from growing too large (bark decoction).

Special preparation: Food: fruits were gathered in late summer and eaten fresh. For winter they were dried whole or ground, pits and all, and dried. Technology: the bark was sometimes pounded to soften it. Baskets were sometimes buried to darken the color of the cherry bark used in their creation.

Other plants used in similar ways: Food: *Prunus virginiana*. Basketry: *Phragmites australis*, *Xerophyllum tenax*

***Prunus virginiana* Linnaeus**

Nez Perce name: **tíms**

Plant family: Rosaceae

English name: chokecherry

Description: Large shrub, sometimes colonial, bark bitter, leaves ovate, leathery, finely toothed; flowers creamy white, in pendant cattail-shaped racemes; fruits black cherries; sometimes forming dense rhizomatous colonies.

Habitat: Mesic to moist areas at low to moderate elevations, southern Canada and much of US.

Plant parts used: wood, bark, fruits

Use category: Food, Technology, Medicine, Cosmetic

Specific uses: Food: fruits (fresh, dried, or in pemmican and other mixtures), fruit juice; peeled twigs inserted into roasting meat for flavoring. Technology: bark for red or yellow coloring in basketry; sap mixed with clay for paint; wood, especially burls, for mortars, handles of digging sticks, roasting skewers, incense tongs, pins to hold mats on tipis; branches for digging sticks, arrow shafts, backrests, incense tongs, roasting skewers; fruits for coloring. Medicine: tonic (bark decoction/infusion or branch decoction with red-osier dogwood roots); heart conditions, nervousness, dysentery, worms, headache, childbirth recovery (bark decoction/infusion); general unwell feeling, colds, cough, influenza, diarrhea, laxative (wood/bark/ branch decoction, sometimes with red-osier dogwood roots and rose branches); sore throat, diarrhea (fruit juice); eyewash (bark resin); stomach medicine (mashed pits); purge, or by nursing mothers to pass medicinal qualities to babies (inner bark infusion with serviceberry). Cosmetic: wood poultice to eliminate "stretch marks."

Special preparation: Food: fruits were gathered in late summer and early autumn and eaten fresh. For winter they were dried whole or ground, pits and all, and then dried and shaped into balls, or boiled or steam-cooked. Medicine: the bark resin was warmed and strained.

Nutritional value: Fruits 30 mg vitamin C per 100g.

Other plants used in similar ways: Food: *Prunus emarginata*.

Comments: All cherry pits contain hydrocyanic acid but preparation methods detoxify them through oxidation. Ripe fruits indicated that salmon were coming upriver to spawn.

***Pseudotsuga menziesii* (Mirbel) Franco**

Nez Perce name: **páps**

Plant family: Pinaceae

English name: Douglas-fir

Description: Large coniferous tree with short needle-like leaves; cones with 'mouse-tail' bracts; seeds small, winged.

Habitat: Mesic to dry forests, lowlands to high elevations; western North America.

Plant parts used: branches, boughs, rotten wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: sugar resin secreted by the leaves of some trees eaten as a treat. Beverage: leaves brewed for hot beverage. Technology: wood is strong and durable and was used for dugout canoes, construction, bows, fire tongs, fuel for pit cooking, torches from pitchy heartwood; bark or decaying wood for smoking hides; branches for fish net poles, dipnet hoops and handles, snowshoe frames, spear shafts, tipi poles, to separate layers in cooking pit, in bottom of canoes to protect occupants from leaking water; boughs for mattresses, floor covering, side lodges for girls at puberty, toboggans, to whip soapberries; spring shoots in moccasin toes to prevent perspiration or athlete's foot; pitch as adhesive, caulking.

Medicine: tonic, kidney/bladder ailments, diuretic (twig or shoot decoction/infusion); anemia, high fever (young shoot infusion); antidote for skin irritations from touching water hemlock (bark decoction); injured bones, cuts, boils, skin ailments (pitch poultice); digestive ailments (hot shoots or boughs, or charcoal applied); skin ointment (ashes of shoots mixed with fat); colds (leader of tree infusion or leaf infusion); rheumatism (leaf infusion, leaves in sweat bath, wood ashes, bough tips/leaves); venereal disease (spring bud decoction).
Spiritualism: boughs burned in the sweat lodge, for scent, incense, cleansing agent or scrubbing for purification; infusion as body wash for purification; boughs to scrub or branch decoction for good luck. Cosmetic: boughs burned for deodorant; leader of tree peeled and chewed for mouth freshener.

Special preparation: Technology: for a canoe the trunk was burned out and shaped.

Nutritional value: Leaves 2.8% protein. Per 100 g: 272 mg calcium, 11.5 mg iron, 264 mg potassium, 610 mg magnesium, 42 mg manganese, 78 mg phosphorous. Rich in vitamin C, more concentrated than in orange juice.

Comments: Ripening of pollen cones indicated that ponderosa pine cambium was 'ripe'.

***Pteridium aquilinum* (Linnaeus) Kuhn**

Nez Perce name: **teqsté qs**

Plant family: Dennstaediaceae

English name: bracken fern

Description: Large fern from deep hairy rhizome; leaves bright green, divided three times; spores around margins of lower leaf surfaces.

Habitat: Moist to dry woods or open slopes, especially in disturbed areas including burned areas, low to high elevations; cosmopolitan.

Plant parts used: rhizomes, stems and leaves

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes. Technology: fronds for bedding, wrapping fish and meat, food cushion/covering in pit cooking. Medicine: colds, diuretic, intestinal worms, to stimulate appetite (rhizome decoction/infusion); arthritis (leaves in steam bath); setting broken bones (frond poultice or leaf decoction as wash); sores (poultice of fronds with pine pitch).

Special preparation: Food: rhizomes were dug in early spring and usually pit steamed or roasted. The white inner portion was dried and pounded into flour, removing the fibers.

Nutritional value: 9% protein. Possibly carcinogenic.

Comments: Bracken fern was considered a sign of water when traveling in the mountains.

***Rhamnus purshiana* DeCandolle**

Nez Perce name: **sálam**

Plant family: Rhamnaceae

English name: cascara

Description: Shrub or small tree with conspicuously-veined oval leathery leaves; fruit a purple-black berry.

Habitat: Forests from the lowlands to the mountains; northwest US and adjacent Canada.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Medicine: emetic (fresh bark); laxative, wash for sciatica (bark infusion).

Special preparation: Medicine: the bark was gathered in spring or autumn, crushed, dried, and brewed into tea.

Comments: 'The natives eat and esteem the fruits highly' (Meehan 1898).

***Rhus glabra* Linnaeus**

Nez Perce name: **tilitilitit**

Plant family: Anacardiaceae

English name: smooth sumac

Description: Rhizomatous shrub with thick waxy reddish-purplish stems and milky juice; leaves pinnately compound; flowers and fruits in dense terminal spikes, dark red, hairy.

Habitat: Swales and draws, dry to mesic slopes, sometimes sandy, lower elevations of inland western North America and eastward.

Plant parts used: roots, leaves, fruits/seeds, fruits, young shoots

Use category: Food, Technology, Medicine, Smoking

Specific uses: Food: fruits or young shoots sometimes eaten. Beverage: tea from fruits.

Technology: rhizomes for yellow coloring, split bark and stems in basketry; leaves as basket covers. Medicine: colds, venereal disease, to stimulate urination, (rhizomes); gastrointestinal ulcers (shredded bark decoction with another plant); tight chest from heart ailments (bark and/or rhizome infusion); sore mouth or tongue (rhizomes chewed); sore throat (sap from squeezed rhizomes); venereal disease (stem/rhizome decoction); skin rashes (leaf poultice); tuberculosis (branch infusion); purgative (fruits); frostbite, itchy scalp (branch/fruit decoction); sores (milky sap); childbirth aid (fruit decoction). Smoking: leaves in smoking mixture.

Nutritional value: 1.5% protein, 2.7% fat, 14% carbohydrates. Per 100 g: 80 RE vitamin A, 60 mg calcium, 55 mg phosphorous.

Comments: Fruits laxative in large doses. Leaves changing color indicated sockeye salmon were spawning.

***Ribes aureum* Pursh**

Nez Perce name: **kál**

Plant family: Grossulariaceae

English name: golden currant

Description: Shrub with small thick three-lobed leaves; flowers yellow, dense on stems; fruits black berries.

Habitat: Washes, streamsides, moist mesic slopes, and open forests, lowlands to moderate elevations; inland western US.

Plant parts used: bark, fruits

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: sores (inner bark poultice); leg swellings (inner bark decoction).

Special preparation: Food: fruits were gathered from April to July and eaten fresh or dried.

Other plants used in similar ways: Food: Rice

***Ribes cereum* Douglas**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: wax currant

Description: Shrub, leaves small, round, three-lobed, with toothed margins; flowers greenish-white or pink, bell-shaped, in many small clusters; fruits translucent scarlet berries.

Habitat: Lowland shrub steppe to montane forests; inland western North America.

Plant parts used: inner bark, stems/leaves, fruits

Use category: Food, Medicine

Specific uses: Food: fruits eaten but not favored (somewhat dry and not flavorful). Medicine: stems/leaves boiled with other plants for washing solution for babies; used to treat stomachache, diarrhea.

Special preparation: Food: fruits were picked in summer and eaten fresh.

Other plants used in similar ways: Food: *Ribes aureum*

Comments: These fruits were not favored being somewhat dry and bland.

***Ribes lacustre* (Persoon) Poiret**

Nez Perce name: **kimmé**

Plant family: Grossulariaceae

English name: swamp black gooseberry

Description: Shrub with prickly stems and five-lobed leaves; flowers pink to purple; fruits dark purple berries.

Habitat: Moist forests and streambanks in montane western and central North America.

Plant parts used: roots, bark, stems, berries

Use category: Food, Medicine

Specific uses: Food: fruits. Medicine: tonic (root/scraped stem decoction); stomach tonic, diarrhea, colds (branch decoction); sore eyes (inner bark infusion); increased health/strength (fruits); women's medicine (fruits).

Nutritional value: Fruits 15% protein, 4% fat, 78% carbohydrates. Per 100 g: 333 mg vitamin C, 320 mg calcium, 5 mg iron, 94 mg magnesium, 2 mg zinc.

Other plants used in similar ways: Food: *Ribes* spp

***Rosa gymnocarpa* Nuttall**

Nez Perce name:

Plant family: Rosaceae

English name: baldhip rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-ovate, margins toothed; flowers pink; fruits bright red 'hips'.

Habitat: Forests from sea level to moderate elevations in the mountains of northwest US and British Columbia.

Plant parts used: branches, fruits

Use category: Food, Beverage, Technology, Spiritualism, Smoking

Specific uses: Food: fruit outer rinds; leaves over and under food in pit oven or cooking basket for flavoring. Beverage: stems, leaves, and bark for tea. Technology: wood for arrow shafts, cradleboard hoops, handles; leaves in pit oven or cooking basket to prevent burning. Medicine: tonic, eyewash (bark/stem/leaf decoction); bee stings (chewed leaf poultice). Spiritualism: leafy sprigs on cradleboards to keep ghosts away or to sweep evil influences out of graves before burial; branch/leaf decoction taken and used as body and hair wash for purification in sweat bath or to overcome jinx, used by hunters to reduce human scent, poured onto hunting equipment to restore luck. Smoking: leaves and bark in smoking mix.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits 'hips'.

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, 'charm' fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled.

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorous.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rosa woodsii* Lindley var. *ultramontana* (Watson) Jepson**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves of round to oval leaflets; flowers very fragrant, pink, five petals, fruits 'hips' which remain on bushes all winter.

Habitat: Open moist places, low to high elevations; inland western and central US.

Plant parts used: fruits, seeds

Use category: Food, Technology, Medicine

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite food; foliage in pit oven for flavoring. Beverage: fruits, spring shoots or foliage brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (root or branch infusion, fruit infusion); sore eyes (bark or flower infusion); cough (branch infusion, fruit infusion); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); to hasten delivery of a baby (fruits chewed); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage infusion for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, 'charm' fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ocher as astringent, to reduce swelling, stop nosebleed or other bleeding, treat sore throat, syphilis, for women after childbirth; bark infusion for sore eyes, inner bark for yellow coloring agent; branches for cradleboard hoops, branch infusion for sore throat, cough; spring shoots as fresh vegetable; foliage to keep away ghosts; leaf poultice for insect bites; flower infusion for sore eyes, burns, minor wounds, heartburn; brewed for tea beverage or to treat sore throat, cough; cooked seeds for muscular pain. Cosmetic: flower petals in cosmetics.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. When other fruits were scarce rose hips were dried and stored for winter.

Nutritional value: Fruits 1300-3500% mg vitamin C. The average rose hip contains 10 mg vitamin C, 3 times the amount in a good orange.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Rubus leucodermis* Douglas**

Nez Perce name:

Plant family: Rosaceae

English name: blackcap raspberry

Description: Prickly trailing shrub having leaves of three leaflets, leaflets whitish beneath, flowers with five white petals; fruits black.

Habitat: Draws, canyons, other moist places, often rocky; low to high elevations; western US and south British Columbia.

Plant parts used: roots, sprouts, fruits

Use category: Food, Technology, Medicine

Specific uses: Food: young sprouts as vegetable; fruits. Technology: fruits squeezed for purple coloring. Medicine: influenza (root decoction); cuts/wounds (powdered stem poultice).

Special preparation: Food: the fruits were collected in late summer and eaten fresh or sometimes cooked and dried in cakes. They were also used in pemmican. Young shoots were cut and peeled.

Nutritional value: Fruits 1.2% protein, 1.4% fat, 17.5% carbohydrates. Per 100 g: 79 kcal, 18 mg vitamin C, 4 RE vitamin A, 38 mg calcium, 200 mg potassium, 28 mg magnesium, 40 mg phosphorous.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals.

***Rubus parviflorus* Nuttall**

Nez Perce name: **ta xtá x**

Plant family: Rosaceae

English name: thimbleberry

Description: Medium shrub with large, soft, palmately lobed leaves, flowers white, five petals, fruits dryish, orangish to red, of little drupelets.

Habitat: Forests, open areas, lowlands to high elevations; western North America.

Plant parts used: young shoots, insect galls, leaves, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: young shoots for spring greens; fruits; roots as sweetener. Beverage: leaves or fruits for tea. Technology: leaves to line cooking pits, berry baskets, and pad layers of berries. Medicine: respiratory ailments (fruits eaten); stomach ailments (root infusion); to prevent scurvy (young shoots); healing of baby's navel (insect gall ashes rubbed on); acne (leaves rubbed on or root decoction drunk).

Special preparation: Food: fruits were gathered from July to September and eaten fresh or dried if abundant. Young shoots were eaten fresh or steamed. Beverage: fruits or leaves were brewed for tea.

Nutritional value: Fruits 1-10% protein, 1.2-4% fat, 24.7-82% carbohydrates. Per 100 g: 105 kcal, 190-259 mg vitamin C, 428-430 mg calcium, 3 mg iron, 44 mg magnesium, 1.8 mg manganese, 62 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Fruits: *Rubus* spp.

Comments: Leaves and flowers high in vitamins and minerals. The Nez Perces preferred to collect thimbleberries at higher elevations.

***Rumex acetosella* Linnaeus**

Nez Perce name: **cicyúkis**

Plant family: Polygonaceae

English name: red sorrel

Description: Small herbaceous rhizomatous plant with triangular leaves lobed at the base, red-green, flowers and fruits in dense spikes.

Habitat: European introduction in disturbed areas.

Plant parts used: leaves

Use category: Food, Medicine

Specific uses: Food: stems/leaves for fresh vegetable. Medicine: upset stomach, inflammation, fever.

Nutritional value: Leaves 1-2 % protein, 0.3-0.6% fat, 5.5-9.6% carbohydrates. Per 100 g: 30-120 mg vitamin C, 560 RE vitamin A, 55-70 mg calcium, 40-45 mg phosphorous, 2.3-5 mg sodium, 31 mg magnesium, 1.2 mg Cu, 1.2 mg zinc, 1.5-2.3 mg iron, 338 mg potassium, 5 mg sodium.

Comments: Rich in vitamin C, vitamin A, beta-carotene.

***Rumex venosus* Pursh**

Nez Perce name:

Plant family: Polygonaceae

English name: sand dock

Description: Low herbaceous perennial from thick rhizomes; leaves long-oval, thick, turning bright red in autumn; flowers small, red, in dense branched clusters; fruits bright red, three-angled, with conspicuous wings.

Habitat: Sand dunes and other sandy places in lowlands to lower mountains; western North America.

Plant parts used: rhizomes

Use category: Technology, Medicine

Specific uses: Technology: red coloring for hides. Medicine: blood tonic (root or whole plant decoction); stomachache, venereal disease (root decoction); burns, wounds, sores, swellings (root poultice or root decoction as wash)

***Sagittaria latifolia* Willdenow**

Nez Perce name:

Plant family: Alismataceae

English name: wapato

Description: Emergent aquatic with large starchy tuberous roots, narrowly arrow-shaped leaves, and white flowers with three petals.

Habitat: In quiet water at low to moderate elevations; Pacific Coast up the Columbia River and in southeast Washington and northern Idaho; central and eastern North America.

Plant parts used: tubers

Use category: Food

Specific uses: Food: root tubers.

Special preparation: Food: tubers were pit steamed or boiled and sometimes dried for winter.

Nutritional value: Tubers 4.7-16% protein, 0-0.2% fat, 20-80% carbohydrates. Per 100 g: 103 kcal, 5 mg vitamin C, 12-35 mg calcium, 6.6-41 mg iron, 922 mg potassium, 51-63 mg magnesium, 22 mg sodium, 165 mg phosphorous, 3 mg zinc.

Comments: Tubers were collected by wading into quiet water and loosening them with toes, causing the tubers to float to the surface. In some areas they were dug in autumn from the mud. The Nez Percés obtained most of their supply through trade.

***Sambucus cerulea* Rafinesque**

Nez Perce name: **míttip**

Plant family: Caprifoliaceae

English name: blue elderberry

Description: Large shrubs with thick stems which are mostly pith; large leaf scars; leaves pinnately compound, in pairs; flowers small, creamy white, in large flat-topped clusters; fruits small blue 'berries'.

Habitat: Streamsides, draws, moist places, protected spots in canyons and on plateaus, lowlands to high elevations; widespread.

Plant parts used: inner bark, stems, flowers, fruits

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: fruits eaten fresh or dried, mashed to marinate fish. Beverage: fruit juice.

Technology: stems for flutes, arrow shafts, elk lures, drinking straws, salmon fishing spear sockets, twirling sticks for firemaking, as 'pipes' to vent underground ovens. Medicine: emetic, diuretic, skin wash (inner bark); arthritis, rheumatism (inner bark decoction or dead stalks in steam bath); lung, stomach or lung ailments, syphilis (dried flower infusion/decoction); fevers, sprains, bruises, antiseptic wash for eyes, skin sores, itching (flower infusion externally); toothache (wad of fresh bark placed in cavity); boils, insecticide (dampened leaf poultice).

Special preparation: Food: fruits were gathered during August-September and eaten fresh. The were also dried in quantity and cooked into sauce. The Okanogan people stored fresh elderberries in layers of pine needles where they would be covered with snow. Technology: stems hollowed out (easy because of the large soft pith).

Nutritional value: Fruits 2.6-16% protein, 1.2-5% fat, 14.6-68% carbohydrates. Per 100 g: 74 kcal, 12-156 mg vitamin C, 12-115 mg calcium, 1-5 mg iron, 7-69 mg magnesium, 0-28 mg phosphorous, 2 mg zinc.

Other plants used in similar ways: Food: *Sambucus racemosa* var. *melanocarpa*.

Comments: The third favorite Nez Perce fruit, not eaten by the Wanapum; Seeds contain hydrocyanic acid.

***Scirpus acutus* Muhlenberg ex Bigelow**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical 'spongy' stems, no leaf blades; flowers and fruits in a terminal grayish cluster.

Habitat: Quiet water of streamsides, ponds, and lakes, tolerant of salt and alkali, from lowlands to moderate elevations; temperate North America.

Plant parts used: rhizomes, young shoots, stems, seeds Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats. Tules were used for sandals, boats, and rafts by some Oregon and Nevada groups.

Nutritional value: Shoots 42 kcal per 100g.

Other plants used in similar ways: Matting: *Scirpus tabernaemontani*, *Typha latifolia*

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical 'spongy' stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds

Use category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats.

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Solidago canadensis* Linnaeus**

Nez Perce name:

Plant family: Asteraceae

English name: goldenrod

Description: Tall unbranched herbaceous perennial in clumps from rhizomes; leaves alternate, long and narrowly lance-shaped, margins sharply toothed and tips long pointed; flowers golden-yellow, in dense heads in branched clusters; fruits tiny, dry, with fluffy hairs.

Habitat: Moist places at low to high elevations; transcontinental North America.

Plant parts used: leaves, seeds

Use category: Food, Medicine, Toys

Specific uses: Food: leaves for cooked greens; seeds to thicken soups. Beverage: dried flowers for tea. Technology: toy whips. Medicine: respiratory problems, diuretic, or applied externally to stop bleeding (leaf infusion); influenza, diarrhea (flower infusion/decoction); sleeplessness, diarrhea, or excessive crying in babies (bathing in shoot decoction); fever in children (shoot infusion).

Special preparation: Medicine: leaves were dried and powdered.

Comments: Some people are allergic to goldenrod pollen.

***Symphoricarpos albus* (Linnaeus) Blake**

Nez Perce name: **cícaqiy**

Plant family: Caprifoliaceae

English name: snowberry

Description: Shrub from rhizomes and forming dense thickets; leaves round, entire, in pairs; flowers small, pink; fruits white berries.

Habitat: Mesic slopes, thickets, open forests in the mountains, lowlands to moderate elevations; widespread in North America.

Plant parts used: roots, stems, leaves, fruits

Use category: Technology, Medicine, Spiritualism

Specific uses: Technology: branches for brooms; leaves for green coloring in basketry. Medicine: stomachache (root infusion, stem decoction, sap of young shoots); colds (root infusion); fever (leaf infusion/decoction, twig decoction); chapped skin, open sores (leaf decoction); eyewash (root infusion, leaf decoction, fruits or fruit juice, bark with wild rose); laxative (sap of young shoots); cleaning out digestive system (stem/leaf/fruit decoction); diarrhea (fruits or fruit infusion); laxative (sap from young shoots); diuretic for men (leaf decoction); burns, sores, cuts, skin irritations (strong wood decoction or crushed fruit/leaf/bark poultice); eyewash, antiseptic wash (bark decoction). Spiritualism: stems hung or draped around cradleboards to keep ghosts away from babies. Cosmetic: mashed berries rubbed in underarms as antiperspirant.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Antidote for eating too many fruits was to eat a large quantity of lard.

***Taxus brevifolia* Nuttall**

Nez Perce name: **támqay**

Plant family: Taxaceae

English name: Pacific yew

Description: Large coniferous understory shrub/small tree with flat green needle-like leaves and seeds surrounded by a fleshy red cup.

Habitat: Moist forests, especially along streams, lowlands to moderate elevations; Western North America.

Plant parts used: wood, flesh around seeds

Use category: Food, Technology, Spiritualism

Specific uses: Food: fleshy red cup around seeds eaten occasionally (seeds not eaten).

Technology: The wood is strong, durable, and hard. It was prized for bows, snowshoe frames, digging sticks (after 'hardening' in fire), spears, mat needles, awls, handles, wedges, paddles. Medicine: any illness (bark decoction); sunburn (wood scrapings with grease); Spiritualism: boughs for scent, incense, spiritual cleansing agent, purification. Cosmetic: boughs for deodorant.

Nutritional value: Seeds toxic (but not the red fleshy cup around seed).

Other plants used in similar ways: Wood: *Philadelphus lewisii*

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural 'doll formation' of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

***Triteleia grandiflora* Lindley**

Nez Perce name: **cátocx**

Plant family: Liliaceae

English name: wild hyacinth

Description: Herbaceous perennial from a corm, leaves strap-shaped, fleshy; flowers in umbrella-shaped clusters, blue, with 6 petals; fruits capsules.

Habitat: Grasslands, steppe, and open ponderosa pine woodlands, dry to mesic meadows, in deep soils of lowlands to moderate elevations; inland Northwest US.

Plant parts used: corms

Use category: Food, Spiritualism

Specific uses: Food: a highly valued supplemental food for the Nez Perce; reportedly not eaten by the Wanapum or some other groups. Spiritualism: some groups include in medicine bags.

Special preparation: Food: corms were dug in April and baked or boiled.

Other plants used in similar ways: Food: *Calochortus* spp, *Fritillaria pudica*.

Comments: Corms are small, thus it requires a lot of digging to obtain a substantial supply. Formerly called *Brodiaea douglasii*.

***Typha angustifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: narrowleaf cattail

Description: Tall narrow herbaceous perennial from thick rhizomes; leaves long, thick, grasslike; flowers very small, in dense spikes, female portion below male portion of spike on same stalk, with a section of bare stalk between them; seeds tiny, with fluffy hairs.

Habitat: In shallow quiet water at a variety of elevations; eastern and central US and central California; introduced in the Northwest US.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes eaten fresh or cooked; pollen used in flour. Technology: leaves for matting, cordage, basketry; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses, diapers. Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds (seed fluff).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Other plants used in similar ways: Matting: *Typha latifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Typha latifolia* Linnaeus**

Nez Perce name: **tóko**

Plant family: Typhaceae

English name: common cattail

Description: Tall herbaceous perennial from thick rhizomes, with long thick grasslike leaves; flowers very small, in dense spikes female portion of spike below and contiguous with male portion, on same stalk; seeds tiny, with fluffy hairs.

Habitat: In quiet water of lowlands to moderate elevations, quickly establishes in disturbed wet areas; North America.

Plant parts used: rhizomes, young shoots, leaves, flower spikes, pollen, seed fluff

Use category: Food, Technology, Medicine

Specific uses: Food: rhizomes, young shoots, young flower spikes; pollen used in flour.

Technology: leaves for matting, basketry, cordage, bindings, sandal ties, capes; seed fluff for insulating moccasins, stuffing pillows, quilts, and mattresses; diapers, wound dressings.

Medicine: diarrhea and other digestive ailments (young flower spikes); dressing wounds, burns (seed fluff poultice).

Special preparation: Food: rhizomes were dug in springtime and eaten raw, pit-cooked, roasted in the fire, or ground into flour. Technology: leaves were dried, soaked, and sometimes split.

Nutritional value: rhizomes 7.7% protein; 4.9% fat; 79% carbohydrates; shoots 68 kcal per 100g; 0.5-2% protein; 0-0.7% fat. Per 100 g: 50-135 mg calcium, 10-11 mg phosphorous, 15-120 mg sodium, 60-370 mg potassium, 30-45 mg magnesium. Pollen 44.5 g carbohydrates per 100 g.

Other plants used in similar ways: Matting: *Typha angustifolia*, *Typha X glauca*, *Scirpus acutus*, *Scirpus tabernaemontani*.

Comments: Air spaces in leaves provide insulation, buoyancy.

***Urtica dioica* Linnaeus**

Nez Perce name: **wetetwé tet**

Plant family: Urticaceae

English name: stinging nettle

Description: Herbaceous perennial from rhizomes; leaves soft, round-toothed, in pairs; stem and leaves with stinging hairs; flowers and fruits tiny, in dense drooping clusters.

Habitat: Wet places, moist slopes, low to high elevations; North America, Eurasia.

Plant parts used: roots, stems/leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: some groups used young shoots for potherb. Technology: stem fibers for cordage. Medicine: tonic, colds, sore muscles (foliage infusion/decoction); pneumonia (plant as inhalant in sweat bath); rheumatism (foliage infusion or root decoction); diuretic (root infusion); counter-irritant for arthritis, stiffness, sore joints, sore muscles, paralysis (fresh plant); bleeding hemorrhoids, hair tonic (root decoction). Spiritualism: plant decoction as wash after sweat bath.

Special preparation: Food: greens were boiled to remove the stinging chemicals. Technology: for cordage, stems were collected after frost, dried after the leaves were stripped off, and fibers were extracted by cracking off the outer skin and inner pith. Medicine: for a counter-irritant, leaves were pounded fine and rubbed on, or the plant used as a switch.

Nutritional value: Leaves 1.8% protein, 0.6% fat, 8% carbohydrates. Per 100g: 75 mg vitamin C, 2248 RE vitamin A, 263 mg calcium, 3 mg iron, 320 mg potassium, 24 mg magnesium, 12 mg sodium, 60 mg phosphorous.

Comments: Rich in vitamins and minerals.

***Vaccinium membranaceum* Douglas ex Torrey**

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: big huckleberry

Description: Shrub with ovate leaves; flowers urn-shaped, pinkish; fruits reddish to purple berries.

Habitat: Mesic slopes in the mountains, foothills to high elevations from British Columbia to California and east to Montana.

Plant parts used: fruits

Use category: Food, Technology

Specific uses: Food: the favorite fruit of the Nez Percés. Technology: fruits for blue, purple, or red coloring in basketry. Medicine: rheumatism, arthritis (root/stem infusion).

Special preparation: Food: fruits were gathered in midsummer and eaten fresh or dried over a slow fire. Dried berries were soaked in water, boiled, or cooked with roots (often mixed with black tree lichen mush).

Nutritional value: Fruits 0.6% protein, 0.5% fat, 31.1% carbohydrates. Per 100 g: 54 kcal, 6.6 mg vitamin C, 14 mg calcium, 8 mg magnesium, 17 mg phosphorous.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: The habitat was sometimes burned to increase berry production.

***Vaccinium scoparium* Leiberg**

Nez Perce name: **?ala?á la**

Plant family: Ericaceae

English name: fireberry, grouseberry, whortleberry

Description: Small shrub with sharply angled green stems and small ovate yellowish-green leaves; flowers urn-shaped, pinkish; fruits small translucent scarlet berries.

Habitat: Forests and disturbed areas, especially burns, moderate elevations to alpine areas in the mountains; inland western US to Colorado, South Dakota, Alberta, and south British Columbia.

Plant parts used: fruits

Use category: Food

Specific uses: Food: fruits.

Special preparation: Food: during late summer and early autumn the fruits were raked from the plants with wooden combs and eaten fresh or dried over a slow fire and cooked later. They were often mixed into black tree lichen mush.

Nutritional value: Fruits rich in vitamin C.

Other plants used in similar ways: Fruits: *Amelanchier alnifolia*, *Vaccinium* spp.

Comments: Highly valued; berries are very small but sweet and tartly delicious. The habitat was sometimes burned to increase berry production. Nez Percés collected these berries on high mountain ridges.

***Valeriana edulis* Nuttall ex Torrey & Gray**

Nez Perce name: **ku ye**

Plant family: Valerianaceae

English name: tobaccoroot, valerian

Description: Ill-smelling herbaceous perennial from a stout taproot; leaves entire or divided into narrow leaflets, flowers small, whitish, in large open clusters.

Habitat: Wet open places at low to high elevations, tolerant of alkali or salt; inland Pacific Northwest US.

Plant parts used: root, leaves

Use category: Food, Medicine

Specific uses: Food: roots an occasional food. Medicine: sedative (roots).

Special preparation: Food: long slow cooking detoxifies the roots.

Comments: The roots have a very unpleasant smell, and sometimes they were used to repel animals from food caches.

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ('seeds') achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine: arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin.

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Zea mays Linnaeus

Nez Perce name:

Plant family: Poaceae

English name: corn

Description: Monoecious annual cultivar with thick stems, broad linear leaves; male flowers in terminal tassels; female flowers in 'ears' with silk.

Habitat: Cultivated

Plant parts used: inner husks

Use category: Technology

Specific uses: Technology: imbrication on cornhusk bags.

Special preparation: Technology: the innermost cornhusks were dried in the sun to make them white. For use they were dampened, torn or cut into narrow strips, and sometimes colored with natural or artificial dyes.

Yanovsky, E., and R. M. Kingsbury. 1938. Analysis of some Indian plant foods. Association of Official Agricultural Chemists 21(4): 648.

Summary: Selected North American indigenous food plants were analyzed chemically to evaluate nutritional value. Tables 1-17 summarize the study's findings.

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The study includes 22 plants known to have been used by the Nez Perce people.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Yanovsky, Elias K.

Author category: Organic chemistry

Background: Chemist, Carbohydrate Research Division, USDA Bureau of Chemistry and Soils; Chemist, USDA Bureau of Agricultural and Industrial Chemistry; Research Chemist Norwalk Tree & Rubber Co.; Bloomfield Laboratories, NJ. Ph.D. 1913 Clark, AM 1912; BS St. Petersburg, Russia

Special interests: Food Chemistry

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (22 total)

***Allium* spp.**

Nez Perce name: sé x

Plant family: Liliaceae

English name: wild onion

Description: Strong-scented herbaceous perennials from bulbs, with narrow or strap-like leaves and umbrella-like clusters of white to purple flowers.

Habitat: A variety of habitats from sea level to alpine, shallow to deep soils, wet to dry; widespread.

Plant parts used: bulbs

Use Category: Food, Medicine, Insect repellent

Specific uses: Food: flavoring, condiment, supplemental food. Medicine: colds, headache, opening sinuses (plant smudge smoke inhaled); coughs (bulb infusion); stopping vomiting (bulb infusion); rheumatism, eyewash, cuts, burns, and sores (bulb infusion applied externally); ear infections, earache (bulb juice); antiseptic, blood tonic. Insect repellent (bulbs rubbed on skin).

Special preparation: Food: bulbs were dug in May-June and eaten fresh, boiled, or roasted like camas. For earache the bulbs were cooked in ashes and the warm juices squeezed into the ear

Nutritional value: Bulbs 5-10% protein, 20-50% inulin. Per 100 g: 15-17 mg vitamin C, 29-55 mg calcium, 1-1.5 mg iron, 345-530 mg potassium, 5-20 mg sodium, 50-205 mg phosphorous.

Comments: Onions were usually eaten in small quantities.

***Amelanchier alnifolia* (Nuttall) Nuttall ex M. Roemer**

Nez Perce name: kel or kikéye

Plant family: Rosaceae

English name: serviceberry, Juneberry, sarvis

Description: Large shrub, leaves glaucous, toothed toward the blunt tip, flowers in small clusters, white, with five strap-shaped petals, fruits blue, berrylike.

Habitat: In canyons, hillsides, and open woods; western to central North America; on the Columbia Plateau in moist to wet spots.

Plant parts used: wood, inner bark, stems/leaves, fruits

Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: the most valued Nez Perce fruits, eaten fresh, dried (the most important stored fruit), used in pemmican, often used to sweeten root foods, black tree moss, etc.; first fruits ceremony celebrated ripening of canyon serviceberries (but best berries were from high prairies). Beverage: tea from twigs. Technology: wood considered the best for arrows, also digging sticks, tool handles, fire drills, salmon spreaders, combs, toy horses, gaff poles, reinforcing dip net hoops; young branches sometimes twisted to make cordage; fruits for purple coloring. Medicine: tonic (branch or fresh bark decoction); digestive problems (bark or stem/leaf decoction, fruit decoction); anti-inflammatory, eyewash (inner bark); purge, contraceptive and after childbirth to aid healing (bark or stem/leaf decoction, sometimes with bitter cherry or chokecherry, or decoction of branch ashes with pine branch/bud ashes); treating colds (branch decoction); earache, eyewash (fruit decoction).

Special preparation: Food: fruits were gathered in late spring and early summer and eaten fresh. They were the most important winter fruit and were dried in large quantities, whole or sometimes after mashing and forming them into cakes. The fruits were also used in pemmican. Technology: for arrows the branches were trimmed to shape, heated, straightened, and polished with horsetails. Some groups fire-hardened the arrow shafts or chewed them to "break" grain and prevent their warping

Nutritional value: Fruits 0.7-5.8% protein, 1.2% fat, 6-31% sugars. Per 100 g: 16 mg vitamin C, 86 RE vitamin A, 52-60 mg calcium, 0.5-2.3 mg iron, 245 mg potassium, 26 mg magnesium, 2.2 mg manganese, 26-40 mg phosphorous.

Other plants used in similar ways: Food: *Crataegus douglasii*, *Vaccinium* spp; Wood: *Cercocarpus ledifolius*, *Holodiscus discolor*, *Philadelphus lewisii*.

Comments: Serviceberries were very often used to sweeten other foods. The habitat was sometimes burned to increase the shrubs and the number of fruits produced on each.

***Arctostaphylos uva-ursi* (Linnaeus) Sprengel**

Nez Perce name: **hotó to**

Plant family: Ericaceae

English name: kinnickinick, bearberry

Description: Low evergreen shrub-vine forming low dense mats, leaves small, leathery; flowers pinkish, urn-shaped; fruits bright orangish-red berries.

Habitat: Open woods, meadows, dryish areas including moist spots on stable sand dunes, lowlands to montane; North America and Eurasia.

Plant parts used: leaves, berries

Use Category: Food, Beverage, Medicine, Spiritualism, Smoking, Cosmetic

Specific uses: Food: fruits; dried and powdered for condiment. Beverage: tea of leaves and young stems. Technology: berries rubbed inside coiled baskets to make them watertight; also used for beads or in rattles. Medicine: skin/scalp problems (whole plant infusion mixed with grease and boiled hoof); tonic, astringent, diuretic, eyewash, treating gingivitis, nephritis, kidney stones, or (leaf infusion); canker sores (dried leaf powder or infusion); alleviating thirst (fresh leaves chewed); earache (smoke from leaves blown into ear); burn dressing (pulverized leaves as poultice). Spiritualism: fresh leaves placed inside moccasins as protection; dried leaves used in religious bundles; dried berries in rattles. Heavy fruit set was taken as predicting a severe winter. Smoking: leaves in tobacco mixture. Cosmetic/adornment: hair rinse (decoction of root or whole plant); dried berries strung for necklaces.

Special preparation: Food: fruits were eaten fresh, fried, or added to root soup. Beverage: fruits were brewed in tea. Smoking: leaves were dried

Nutritional value: Leaves 1.7% protein, 3.1% fat. Per 100 g: 21 RE vitamin A, 221 mg calcium, 12.7 mg iron, 39 mg phosphorous. Fruits 0.7% protein, 1.1% fat, 8-26% sugars. Per 100g: 92 kcal, 37 mg calcium, 1.3 mg copper, 17 mg magnesium, 35 mg phosphorous.

Other plants used in similar ways: Food: *Arctostaphylos nevadensis*. Smoking: *Arctostaphylos nevadensis*, *Cornus sericea* ssp. *sericea*, *Nicotiana attenuata*, *Pachistima myrsinites*.

Comments: Berries are tart and rather mealy, when fried they pop open.

***Balsamorhiza sagittata* (Pursh) Nuttall**

Nez Perce name: **pásx**, seeds = **wa'wit**

Plant family: Asteraceae

English name: arrowleaf balsamroot

Description: Herbaceous perennial with large woody taproot; leaves in a *Basal rosette*, large, triangular, soft-hairy; flowers in sunflower-like heads with butter-yellow rays; fruits achenes, like small sunflower seeds.

Habitat: Drylands in deep soils but not in the driest areas (where precipitation is less than 12 inches or so annually); inland Northwest US.

Plant parts used: root, young flower stalks, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots as an accessory food; young shoots eaten for spring greens or snack; "seeds" eaten raw or roasted. Technology: leaves to separate camas layers in pit ovens, as insulation in moccasins, or wrapped around young boys' feet to practice walking silently and gently. Flowers: yellow coloring in basketry. Medicine: body aches (root smudge smoke), respiratory ailments, headache, rheumatism, stimulating urination, cathartic, to stimulate hair growth (root infusion); topical antiseptic (sap); poultice for burns, wounds, bruises, insect bites, to induce sweating (root or leaves, fresh or powdered dry); to treat poison-ivy (leaf infusion applied externally); dysentery ("seeds" eaten).

Special preparation: Food: roots were dug in early spring, pounded, peeled, and pit steamed or boiled. They were also dried for winter, sometimes threaded on a cord. They were sometimes dug before they emerge from the ground. Flower stalks were gathered in spring-early summer and peeled for eating fresh or cooked. The "seeds" were roasted whole in baskets or pounded into meal and formed with fat into balls or cakes

Nutritional value: Roots 0-6% protein, 2-14% sugars, 2-6% starch, 6-12% inulin. Shoots 0.3% protein. Per 100 g: 14 mg vitamin C, 173 mg calcium, 47 mg phosphorous.

Other plants used in similar ways: Root food: *Balsamorhiza hookeri*, *Balsamorhiza incana*, *Wyethia amplexicaulis*; "Seeds:" *Helianthus annuus*

***Bryoria fremontii* (Tuckerman) Brodo & D. Hawksworth**

Nez Perce name: **ho póp**

Plant family: Alectoriaceae

English name: black tree lichen

Description: Black hair-like lichen pendant on tree branches.

Habitat: Forest habitats from lowlands to high elevations, pendant on coniferous tree branches.

Plant parts used: thallus

Use Category: Food, Technology, Medicine

Specific uses: Food: pudding, cereal, soup, a delicacy; also conveniently gathered as emergency food. Technology: diapers in cradleboard; emergency clothing (twined with other plant fibers); black coloring in basketry. Medicine: upset stomach, indigestion, diarrhea.

Special preparation: Food: lichens were gathered in midsummer with a wire hook or stick, preferably from tamarack, ponderosa pine, or trees at high elevations. The lichens were cleaned, soaked overnight to remove bitterness and steamed in a pit oven overnight or fermented and cooked for a shorter time. Cooked lichens were eaten right away, or pounded into meal that was dried and cooked for cereal, pudding, or soup, or shaped into balls or loaves

Nutritional value: 4.4-5% protein, 9% fat, 0.3% sugars, 23% starch. Per 100 g: 400 mg calcium, 100 mg phosphorous.

Comments: Nez Percés preferred to gather black tree lichens in the mountains, especially from tamarack trees.

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 petals.

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks and leaves Use Category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Claytonia lanceolata* Pursh**

Nez Perce name: **capcí lay**

Plant family: Portulacaceae

English name: springbeauty

Description: Small succulent herbaceous perennial from a corm; leaves strap-shaped, delicate; flowers white to deep pink.

Habitat: Moist to dry habitats, usually in or near forests; western North America from foothills to alpine areas.

Plant parts used: tubers, leaves

Use Category: Food

Specific uses: Food: supplementary.

Special preparation: Food: tubers were dug after flowering and eaten fresh or more often pit-cooked or boiled in baskets. Sometimes they were dried and stored (sometimes strung on a cord), or cooked first and shaped into loaves for drying and storage. Some Plateau peoples stored the tubers fresh in cache pits

Nutritional value: Tubers 2% protein, 0.2% fat, 22-30% carbohydrates (1.1% sugars, 8.5-26% starch).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Apparently not eaten by the Wanapum. Formerly occurred on prairies near Craigmont, now in open ponderosa pine forests and stream terraces.

***Crataegus douglasii* Lindley**

Nez Perce name: **císnim**

Plant family: Rosaceae

English name: black hawthorn

Description: Large shrub, leaves with three shallow lobes, flowers white, five petals, fruits black "berries."

Habitat: Moist mesic areas at low to moderate elevations, in the inland Northwest mostly along streams or on north-facing hillsides; western North America.

Plant parts used: wood, bark, sap, branches, spines, flowers, fruits

Use Category: Food, Technology, Medicine

Specific uses: Food: fruits eaten alone or mixed with other foods, also used in pemmican.

Technology: wood for digging sticks; branches for drying meat, pins for holding mats to tipis; thorns for awls, fish hooks, probes, pins, ear piercing. Medicine: diarrhea, dysentery, chest pains (bark infusion); stomach ailments (wood/bark/root decoction); general illness, heart

tonic, diarrhea (bark infusion, shoot infusion, fruits, or flowers); arthritis pain (thorn embedded in painful area, then burned down to skin level).

Special preparation: Food: fruits were gathered in autumn and eaten fresh or pounded into pulp and shaped into cakes for drying if serviceberries not abundant

Nutritional value: Fruits 3.2% protein, 3-3.5% sugars. Per 100 g: 880 mg calcium, 0.07 mg iron, 150 mg phosphorous.

Other plants used in similar ways: *Amelanchier alnifolia*, *Crataegus columbiana*, *Philadelphus lewisii*.

Comments: Fruits have 2-5 large stones and were not a favorite. If serviceberries were scarce haws were collected and dried in quantity. The ripening of fruits indicated that huckleberries would be ripe in the mountains.

***Erythronium grandiflorum* Pursh**

Nez Perce name:

Plant family: Liliaceae

English name: glacier-lily, dogtooth-violet

Description: Small lily-like herbaceous perennial from a deep elongate corm, two tapering leaves with "pinched" tips; flowers bright yellow, with 6 petals and 6 red or yellow pollen-producing anthers.

Habitat: Mountain forests, high meadows, or sometimes sagebrush, in deep rich soils, from moderate elevations to near timberline; northern western US and south British Columbia.

Plant parts used: bulbs, leaves and green pods

Use Category: Food, Medicine, Spiritualism, Confection

Specific uses: Food: bulbs in soups or stews, like potatoes, or in "pudding." Medicine: fever, antibacterial agent (leaf infusion); boils (bulb poultice); colds (bulbs). Spiritualism: love potion (bulb). Confection: small root ends of bulbs.

Special preparation: Food: the bulbs were dug at flowering time (beginning in April) and pit-steamed or roasted in ashes. For winter they were peeled, dried and strung for storage. Dried bulbs were soaked and pit-steamed or boiled. Some reports indicate the plant was not eaten ("The natives reckon the root unfit for food." Land C journals)

Nutritional value: Bulbs 5% protein, 9.5-12.5% sugars, 35-45% starch; contain inulin.

Other plants used in similar ways: Food: *Fritillaria pudica*.

Comments: Bulbs are small and difficult to dig (deep); therefore they were primarily an emergency food. Some groups burned the habitat to increase these plants.

***Fritillaria pudica* (Pursh) Sprengel**

Nez Perce name: **stiméx**

Plant family: Liliaceae

English name: yellowbells

Description: Small lily-like herbaceous perennial with corm, two strap-shaped fleshy leaves; blooms early spring, flowers one per stalk, pendant, golden-yellow fading to red, 6 petals; fruits capsules that are broadest at the top.

Habitat: Drylands: sandy or rocky soils in grasslands, steppe, and open forests at low to moderate elevations; inland western US and adjacent Canada.

Plant parts used: bulbs

Use Category: Food

Specific uses: Food: bulbs probably a supplementary food; eaten fresh, boiled, pit roasted, or in soup.

Special preparation: Food: bulbs were dug in spring and eaten raw, pit-steamed, or boiled. For winter they were spread on mats to dry

Nutritional value: Bulbs 2.3-15% protein, 71% carbohydrates (4.9 g sugars, 4.5-18.5 g starch). Per 100 g: 64 kcal, 38-202 mg calcium, 16.5-88 mg iron, 96-177 mg magnesium, 2-4 mg zinc. Highest iron content of root foods.

Other plants used in similar ways: Food: *Erythronium grandiflorum*.

Comments: Not a favorite food because bulbs are small. Blooming of this plant indicates spring is here. It is common on steep slopes of the Snake River in deep stable soils.

***Glycyrrhiza lepidota* Pursh**

Nez Perce name:

Plant family: Fabaceae

English name: wild licorice

Description: Herbaceous perennial from rhizomes, up to one or two m tall; leaves pinnately compound with narrow pointed leaflets; flowers yellowish, in dense spike; fruits burr-like pods.

Habitat: Moist to wet places, or sometimes weedy, low to mid elevations in western and central North America.

Plant parts used: rhizomes, leaves

Use Category: Food, Medicine

Specific uses: Food: spring shoots as green vegetable; rhizomes. Medicine: sore throat, cooling effect in sweathouse (rhizomes chewed or rhizome decoction); tonic, stomachache, diarrhea (rhizome decoction); chest pain, coughs, sore throat (rhizome infusion); rheumatism (rhizome infusion externally).

Special preparation: Food: rhizomes were roasted and shoots were eaten raw or cooked.

Medicine: roots were chewed for sore throat or tonic

Nutritional value: Rhizomes 15% protein, 1% fat, 0-1.3% sugars, 2.8-7.1% starch.

Comments: Not directly reported to have been used by the Nez Percés but available along the Snake River.

***Heracleum lanatum* Michaux**

Nez Perce name: **?ayc ?ayc**

Plant family: Apiaceae

English name: cow-parnsnip

Description: Large herbaceous perennial with thick hollow stems and large soft compound toothed leaves; flowers small, white, in dense umbrella-shaped clusters; fruits in dry pairs, "striped" with oil tubes.

Habitat: Moist mesic areas and streamsides in the lowlands to moderate elevations; North America and Siberia.

Plant parts used: stems, leaves, roots, seeds

Use Category: Food, Technology, Medicine, Spiritualism

Specific uses: Food: young peeled stems or leafstalks as spring vegetable; plant base as salt substitute; roasted stalks. Technology: mature stems made into flutes, elk whistles, and toy blowguns; stems used for straws to eat soup. Medicine: tonic, purgative, swelling feet, syphilis (root decoction); sore back, bruises, chronic swellings (root poultice); diarrhea, wart removal (young stem infusion); rheumatism (leaves as poultice or root decoction); infected cuts (leaves as poultice); local mouth anesthetic (sucking mature green fruits); scalp cleansing (root decoction with chokecherry and red-osier dogwood). Spiritualism: root decoction for purifying wash.

Special preparation: Food: young flower stalks and leaf stalks were cut in spring before flowering, always peeled, and eaten fresh or boiled, pit-steamed, or roasted in the fire

Nutritional value: Peeled stalks 0.4-18% protein, 0.2% fat, 3-44% sugars, 0-14% starch, 0.8-5% inulin. Per 100 g: 3.5-6 mg vitamin C, 7.5 RE vitamin A, 28 mg calcium, 12 mg magnesium, 19-70 mg phosphorous.

Other plants used in similar ways: Greens: *Balsamorhiza sagittata*, *Lomatium grayi*, *Lomatium salmoniflorum*, *Lomatium triternatum*.

Comments: Contact dermatitis can occur in susceptible individuals especially if plant is wet.

***Juniperus scopulorum* Sargent**

Nez Perce name: **ciké yelx**

Plant family: Cupressaceae

English name: Utah juniper

Description: Small graceful dioecious coniferous trees with shreddy bark and scale-like leaves; cones berry-like, waxy-bluish.

Habitat: Riparian fringes and moist to dryish areas, lowlands to low mountains; western US and southern British Columbia.

Plant parts used: foliage, cones

Use Category: Food, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: cones occasionally eaten in small amounts. Beverage: cone infusion taken into sweathouse (drunk in small quantities). Technology: wood for bows, spears, clubs, lance shafts, hafting implements, drum frames, posts, snowshoe frames; pounded branches and cones to poison arrow points (through blood coagulation); leafy branches for smoking skins. Medicine: stomach ailments (cone decoction externally); pneumonia, fever, chickenpox, diabetes, to relax muscles in preparation for childbirth (foliage/cone infusion); heart ailments (foliage/cone decoction); tuberculosis, kidney/bladder ailments (foliage/cone infusion/decoction or cones eaten); diuretic (cones eaten); colds (foliage/cone infusion or lower bark decoction); to control vomiting (cone infusion); internal bleeding (branch tip/leaf decoction); arthritis, rheumatism (foliage/cone infusion/decoction externally, or poultice); sores (foliage poultice or foliage/cone decoction as wash); insect bites/stings, insect repellent, killing ticks on horses (cone or foliage decoction externally). Spiritualism: branches as incense; to purify air, ward off illness, as good luck charm; in sweat baths; cone decoction to combat evil spirits. Cosmetic: branches for scent, deodorant, cleansing agent; cones for beads.

Special preparation: Spiritualism: branches and cones were burned for fumigation or boiled in water for a purifying washing solution for clothing and furniture

Nutritional value: Leaves rich in vitamin C, more concentrated than in orange juice; cones 6.5% sugars.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Rosa* spp, *Symphoricarpos albus*

Lewisia redeviva Pursh

Nez Perce name: **litá n**

Plant family: Portulacaceae

English name: bitterroot

Description: Stemless herbaceous perennial with cluster of fleshy roots and rosette of linear succulent leaves in early spring; flowers usually appear after leaves shrivel, pink or white, with many petals; fruits capsules with shiny black seeds.

Habitat: Steppe and open forests, dry places, rocky ridgetops, shallow soil, sand, and vernal wet places in lowlands to low mountains; inland western US and adjacent Canada.

Plant parts used: roots

Use Category: Food, Medicine, Spiritualism

Specific uses: Food: roots a staple and a condiment; leaves sometimes boiled for greens.

Medicine: blood tonic (root decoction); heart or pleurisy pain (root infusion); sore throat (pounded dry root chewed); to increase mother's milk (root decoction/infusion or roots eaten); diabetes (roots eaten fresh or dried); sores (raw root poultice); poison-ivy (raw roots eaten). Spiritualism: -plant "hearts" used in some rituals.

Special preparation: Food: roots were dug in late spring when the flower buds are out but not open. The root crown (developing shoot) was removed and tossed back into the hole; it would usually regrow. Peeled bitterroots were eaten baked, boiled, or steamed. For winter they were dried whole (they were not ground up because that makes them bitter). Dried bitterroots were boiled for dessert. Nez Perces secured bitterroot through trade or dug in the foothills and mountains at the margins of their territory.

Nutritional value: Roots 0.7-10% protein, 0.6-1% fat, 85% carbohydrates (1.1-6.1% sugars, 18-48% starch). Per 100 g: 343 kc, 27 mg vitamin C, 168-440 mg calcium, 1.3-6 mg iron, 20-25 mg magnesium, 0-20 mg phosphorous, 1.3-3 mg zinc (the highest zinc content of root foods).

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: Bitterroot was prized and was one of the primary root foods. A handful of dried bitterroots would feed two or more people for one meal, and reportedly "a single oz of dried root gave sufficient/nourishment for a full meal" (Joel Palmer, Superintendent of Indian Affairs in Oregon during the 1850's). Removing the root crown and "planting" it often resulted in the regrowth of a plant. Bitterroot was an important trade item.

Lomatium cous (S. Watson) Coulter & Rose

Nez Perce name: **qá msit (qaws = any dried lomatium root)**

Plant family: Apiaceae

English name: kouse, cous

Description: Low herbaceous perennial with tuberous root and bright green finely divided leaves; flowers in dense round clusters, yellow; fruits in flat pairs, "striped" with oil tubes.

Habitat: Open areas on rocky ridgetops, shallow soils, vernal wet areas in lowlands to alpine areas; southeast Washington and northeast Oregon east to Montana and northern Wyoming.

Plant parts used: tuberous root

Use Category: Food, Medicine

Specific uses: Food: a staple. Medicine: healing and strengthening (put in sack, wet, rubbed on skin).

Special preparation: Food: cous was dug in spring, peeled, and eaten raw or boiled. For winter it was dried and eaten whole or ground to the size of oatmeal or cornmeal for cereal, or formed into small cakes, long loaves, or "fingerprint" balls, or patties. Sometimes cous was smoked during drying

Nutritional value: Tubers 1.6-5% protein, 1-1.2% fat, 93% carbohydrates (0-1.8% sugars, 12-42% starch). Per 100 g: 371 kcal, 8 mg vitamin C, 88-120 mg calcium, 0.1-3 mg iron, 23-57 mg magnesium, 0-19 mg phosphorous, 1-2 mg zinc.

Other plants used in similar ways: Food: *Lomatium* spp., *Lewisia rediviva*

***Perideridia gairdneri* (Hooker & Arnott) Mathias**

Nez Perce name: **cawítx**

Plant family: Apiaceae

English name: yampa, Indian-carrot

Description: Herbaceous perennial with fleshy carrot-like taproot; leaves divided into long narrow segments; flowers tiny, white, in dense umbrella-shaped clusters; fruits paired.

Habitat: Moist swales and draws, wet to dry meadows, and open woods, lowlands to mid elevations; western North America from southern British Columbia to southern California and Colorado.

Plant parts used: roots, seeds

Use Category: Food, Technology, Medicine

Specific uses: Food: roots a highly favored food; seeds used as flavoring. Technology: roots rubbed on arrows for waterproofing, and used for black coloring for basketry. Medicine: diarrhea, diuretic, laxative, expectorant, sore throat, sores, wounds, swellings (root infusion); cough (root infusion, root chewed, or root smudge inhaled).

Special preparation: Food: roots were dug in early to mid summer, peeled, and eaten raw, roasted, boiled, or steamed, or ground fresh and cooked for porridge. For winter they were dried whole or shaped into cakes. Dried roots were cooked and crumbled for soup; cakes were eaten dry or cooked into cereal

Nutritional value: Tubers 2.4-7% protein, 1% fat, 84% carbohydrates (0.5-5% sugars, 12-28% starch). Per 100 g: 350 kcal, 3 mg vitamin C, 20-86 mg calcium, 1.6-5 mg iron, 22-80 mg magnesium, 0-32 mg phosphorous, 1-1.6 mg zinc; high in beta-carotene.

Other plants used in similar ways: Food: *Perideridia bolanderi*.

Comments: The third most important root food to the Nez Percés. The roots taste like carrots. It is very scarce in Nez Perce territory now because the habitat has been destroyed by agriculture and domestic grazing.

***Pinus contorta* Douglas ex Louden**

Nez Perce name: **qalámqalam**

Plant family: Pinaceae

English name: lodgepole pine

Description: Coniferous tree with needlelike leaves in clusters of two, semicircular in cross-section; cones small, asymmetrical, prickly, persisting on branches, often opening after fire; seeds winged.

Habitat: Forests, especially disturbed areas including burns, low elevations to subalpine, east of the mountains in frost pockets and at higher elevations; western North America.

Plant parts used: branches, inner bark, pitch, buds

Use Category: Food, Technology, Medicine, Spiritualism, Confection

Specific uses: Food: inner bark, seeds. Beverage: leaf tea. Technology: bark for temporary berry baskets; pitch for caulking, adhesive; wood for lodge poles, tipi poles, backrest poles, sleeping platforms, travois, fish traps, handles, fasteners on food storage bags, wind chimes, story sticks; burls for bowls; pitch for caulking, adhesive. Medicine: tuberculosis, stomach ailments (inner bark eaten); chest congestion, cough, aches and pains (pitch poultice with grease or marrow); cough, colds, stomach ulcers, burns, boils (pitch infusion/decoction); sore throat (buds chewed or pitch poultice with grease); influenza (branch infusion). Spiritualism: boughs for incense, cleansing agent after sweat bath; wood in a basket of water to bring rain, cones burned to stop rain. Cosmetic: pitch mixed with grease and rose petals and red ochre for face cream or for babies, boughs for scent. Confection: pitch or young shoots chewed.

Special preparation: Food: strips of bark were peeled from trees in early spring after the sap started running, and the inner layers were scraped off and eaten fresh or sometimes dried for winter

Nutritional value: Leaves rich in vitamin C. Cambium: 2.4% protein, 0.8-2% sugars.

Other plants used in similar ways: Food: *Pinus ponderosa*.

Comments: Ripening of pollen cones indicated that inner bark was ready to collect.

***Rosa nutkana* Presl**

Nez Perce name: **tá msas**

Plant family: Rosaceae

English name: wild rose

Description: Prickly shrub with pinnately compound leaves, leaflets round-oval, margins toothed; flowers solitary, with five pink petals; fruits "hips."

Habitat: Woods and moist places from lowlands to moderate elevations; montane areas of western North America.

Plant parts used: wood, stems/leaves, flowers, fruits

Use Category: Food, Beverage, Technology, Medicine, Spiritualism, Cosmetic

Specific uses: Food: spring shoots as fresh vegetable; fruits eaten but not a favorite; foliage in pit oven for flavoring. Beverage: fruits or spring shoots brewed for tea. Technology: inner bark for yellow coloring agent; branches for cradleboard hoops. Medicine: astringent, to reduce swelling, stop nosebleed or other bleeding, syphilis, childbirth recovery (root decoction); sore throat (roots, branch infusion, fruits); sore eyes (bark or flower infusion); cough (branch infusion, fruits); diarrhea, vomiting, women's ailments (leaf/branch decoction with chokecherry and red-osier dogwood); insect bites/stings (leaf poultice); burns, minor wounds, heartburn (flower infusion); muscular pain (cooked seeds); athlete's foot (leaves in moccasins). Spiritualism: foliage to keep away ghosts; foliage tea for protection against bad spirits; foliage decoction in sweat bath for purification or in washing water to eliminate jinx; branches in water to get rid of human scent, "charm" fishing equipment. Cosmetic: flower petals mixed with pine pitch, grease, and red ochre.

Special preparation: Food: the fruits were collected during late summer and eaten fresh or cooked. Spring shoots were cut and peeled

Nutritional value: Fruits 1.6-7% protein, 0.6% fat, 15-18% sugars. Per 100 g: 74 kcal, 413 mg vitamin C, 180 RE vitamin A, 77 mg calcium, 26 mg magnesium, 1.8 mg sodium, 37 mg phosphorus.

Other plants used in similar ways: Spiritualism: *Abies grandis*, *Abies lasiocarpa*, *Juniperus communis*, *Juniperus scopulorum*, *Rosa* spp, *Symphoricarpos albus*.

Comments: Rose hips are the richest natural source of vitamin C but were not favored because of the large seeds and the hairs among them. They were an important emergency food in winter as they remain on the branches.

***Scirpus tabernaemontani* C. Gmelin**

Nez Perce name: **tóko**

Plant family: Cyperaceae

English name: tules, bulrush

Description: Tall herbaceous perennial with cylindrical "spongy" stems, no leaf blades; flowers and fruits in a terminal reddish-brown cluster.

Habitat: Aquatic, quiet streamsides, ponds, and lakes at lower elevations; temperate North America and southward. Less common in the Northwest US than *S. acutus*.

Plant parts used: rhizomes, young shoots, stems, seeds Use Category: Food, Technology

Specific uses: Food: rhizomes eaten fresh, roasted, boiled into syrup, or ground into flour; young shoots, lower stems, and seeds eaten fresh. Technology: stems for cordage, mats (including bedding, pillows, floor mats, room dividers, for drying foods, capes, and roofing for tipis and lodges), basketry, bags, sandal ties. Medicine: thirst prevention (syrup from boiled rhizomes, or rhizomes chewed); stopping bleeding of baby's navel (stem ashes).

Special preparation: Technology: stems were dried soaked, and sewn together with cordage or twined with sedges and other plants to make mats

Nutritional value: Rhizomes 2.9-3% sugars, 5.2-5.5% starch.

Other plants used in similar ways: Matting: *Scirpus acutus*, *Typha latifolia*.

Comments: Formerly called *Scirpus validus*.

***Sium suave* Walter**

Nez Perce name:

Plant family: Apiaceae

English name: water-parsnip

Description: Sprawling herbaceous perennial three-four ft. tall, from tubers and rooting at the stem nodes, with leaves divided into leaflets; flowers small, white, in umbrella-shaped clusters.

Habitat: Low wet places, low to moderate elevations; North America.

Plant parts used: tuberous roots

Use Category: Food, Medicine

Specific uses: Food: tubers an occasional food; stems/leaves as relish. Medicine: backache, colds, diarrhea, sore throat, gonorrhea, prevent measles, chicken pox, whooping cough (tubers).

Special preparation: Food: tubers were dug during spring and early summer and eaten fresh or pit-cooked. Medicine: tubers were cut up and boiled for tea.

Nutritional value: Roots/tubers 6% protein, 4-9.5% sugars, 9-30% starch, 4-9.5% inulin.

Other plants used in similar ways: Food: *Lomatium* spp.

Comments: This plant is easily confused with the deadly water-hemlock.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: talátat

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use Category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the

base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed
Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Wyethia amplexicaulis (Nuttall) Nuttall

Nez Perce name: tá ko

Plant family: Asteraceae

English name: mules ears

Description: Herbaceous perennial with taproot and shiny triangular leaves; flowers sunflower-like, with butter-yellow rays; fruits ("seeds") achenes.

Habitat: Wet swales, open slopes, and dry meadows from the foothills to moderate elevations; inland mountains from British Columbia to southern Oregon, Nevada, and Wyoming.

Plant parts used: young flower stalks, root, seeds

Use Category: Food, Medicine

Specific uses: Food: roots; young shoots eaten fresh; seeds as emergency food. Medicine:

arthritis, rheumatism (warmed pounded root poultice); bruises, swellings, to induce sweating (root decoction externally or root poultice).

Special preparation: Food: roots were pit-cooked to break down the inulin

Nutritional value: Roots 0-9% protein, 4-6% sugars, 9% starch, 16-23% inulin.

Other plants used in similar ways: Roots: *Balsamorhiza sagittata*. Greens: *Balsamorhiza sagittata*, *Helianthus annuus*, *Heracleum lanatum*, *Lomatium grayi*, *Lomatium salmoniflorum*

Yanovsky, E., E.K. Nelson, and R. M. Kingsbury. 1932. Berries rich in calcium. Science 75(1952): 565-566.

Summary: Chemical analysis of hackberry fruits showed that they are rich in calcium [mostly from the seeds].

Methodology: Chemical analysis

Significance to Nez Perce ethnobotany: The plant analyzed is not the same hackberry species as that in Nez Perce territory, but the chemical composition would be similar. The analysis strongly suggests that hackberries were an important calcium source in the Nez Perce diet.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Yanovsky, Elias K.

Author category: Organic chemistry

Background: Chemist, Carbohydrate Research Division, USDA Bureau of Chemistry and Soils; Chemist, USDA Bureau of Agricultural and Industrial Chemistry; Research Chemist Norwalk Tree & Rubber Co.; Bloomfield Laboratories, NJ. Ph.D. 1913 Clark, AM 1912; BS St. Petersburg, Russia

Special interests: Food Chemistry

Methodology: Chemical analysis

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (none)

Zenk, H. B., and B. Rigsby. 1998. Molala. Pp. 439-445 in Walker, Jr., D.E. (ed.). Handbook of North American Indians v. 12. Plateau. Smithsonian Institution, Washington, DC.

Summary: The traditional Molala life was somewhat different from that of most Plateau groups in that meat was the primary item of subsistence. Their use of plants is not described in much detail but apparently focuses on roots and berries for food, and technological uses of plants are similar to other Plateau cultures.

Methodology: Library and museum research

Significance to Nez Perce ethnobotany: Roots and berries were important to the Molala, as they were to the Nez Percés.

Implications for future management of Nez Perce National Historical Park lands:

About the author: Zenk, Henry B.

Author category: Anthropology

Background: Portland, OR. Ph.D. University of Oregon 1984; MS Portland State University

Special interests: Traditional language, Ethnobiology

Methodology: Library and museum research

Context: scientific/academic

Specific Nez Perce plants discussed in this reference (3 total)

***Camassia quamash* (Pursh) Greene**

Nez Perce name: **qémes**; stalks and leaves = **qemesnim hehen**; sundried loaves = **é pine**

Plant family: Liliaceae

English name: camas

Description: Lily-like herbaceous perennial from a bulb, leaves thick, strap-like, grayish-green or bright green; flowers in racemes, usually blue (sometimes white or violet), with 6 "petals."

Habitat: Wet meadows, vernal wetlands, in shallow to deep soils of lowlands to high elevations; western North America.

Plant parts used: bulb, stalks, leaves

Use category: Food, Beverage, Technology, Medicine

Specific uses: Food: a primary Nez Perce staple, camas and kouse made the bulk of root foods stored for winter; camas was often added to soups and stews, or boiled with thickener for sweet gravy. Beverage: boiled bulbs for a hot drink. Technology: mattresses, separating layers of bulbs in pit oven (stems/leaves). Medicine: coughs, to induce labor.

Special preparation: Food: the bulbs were dug at the end of flowering during mid-late summer, or after fruiting in the autumn. Bulbs were partially dried, peeled, and steamed in a pit oven 2-3 days to break down the inulin into simple sugars. Occasionally the bulbs were boiled rather than pit-roasted. Cooked camas was dried and stored whole in sacks or ground for porridge or cakes. Overcooked camas was used as a syrupy tea for coughs.

Nutritional value: Cooked bulbs (% dry wt) 2.5-14% protein, 80% carbohydrates (43% simple sugars, 11-45% inulin). Per 100 g: 167-280 mg calcium, 2% copper, 2-23 mg iron, 190 mg phosphorous, 3 mg zinc; 0.5% magnesium, 10% manganese.

Comments: Reportedly the best time to dig camas bulbs is after seed is set, as the bulbs are stringy and soft before then. The abundance and vigor of camas plants growing in Nez Perce territory made the area important for food-gathering and social interaction among many different groups. Camas was a valuable trade item. Most habitat has been destroyed by farming and development (Weippe prairie, Paradise Creek near Moscow); still at Camas Prairie, Musselshell Meadows, other small spots.

***Thuja plicata* Donn ex D. Don**

Nez Perce name: **talátat**

Plant family: Cupressaceae

English name: western redcedar

Description: Large coniferous tree with fibrous bark, leaves scale-like on flattish gracefully pendant branchlets; cones small, with four long scales.

Habitat: Forests, streamsides and swales in the mountains, low to moderate elevations; western coastal North America and inland Washington to Montana.

Plant parts used: roots, inner bark, wood

Use category: Food, Beverage, Technology, Medicine, Spiritualism

Specific uses: Food: inner bark. Technology: rootlets in coiled basketry; outer bark for leantos, roofing, canoe seats, storage containers, lining food caches; inner bark for basketry (especially favored for berry baskets), cordage, fishing ropes, matting, blankets, clothing; boughs for green coloring. Western redcedar is the most important source of industrial wood, for canoes, rafts, river poles, lodges, bows, snowshoes, fish traps, paddles, boxes, cradleboards, pegs, net shuttles, spoons, pins to prevent meat shrinkage while drying, fishnet floats, drum frames. Medicine: tonic (bough infusion with three other plants as wash in sweathouse); colds, coughs, flu, diarrhea (bough infusion); arthritis, rheumatism (soaking in bough infusion, or weak infusion ingested); dandruff (bough infusion); childbirth recovery (twig decoction); leprosy (decoction of old green cones). Spiritualism: boughs for incense, to scrub skin in the sweathouse; a natural "doll formation" of roots brought good luck to the person finding it.

Special preparation: Food: the inner bark/cambium was sometimes formed into cakes to be dried and stored. Technology: bark strips were pulled from the tree trunk starting near the base. The outer bark was removed and the inner bark folded into a bundle and later split. For canoes, a log was burned out, trimmed, and smoothed.

Nutritional value: cambium/inner bark 0.2% protein, 0.5% fat, 6.3% carbohydrates. Per 100 g: 27 kcal, 10 mg calcium, 8 mg magnesium, 39 mg phosphorous, 0.4 mg zinc

Vaccinium spp.

Nez Perce name: **cemítk**

Plant family: Ericaceae

English name: huckleberries, blueberries

Description: Shrubs with ovate leaves, small urn-shaped pinkish flowers; fruits red to blue or black berries.

Habitat: Montane.

Plant parts used: fruits

Use category: Food, Beverage

Specific uses: Food: fruits.

Special preparation: Food: fruits were picked in summer. Beverage: berries were brewed for tea.

Nutritional value: Fruits 7-16% mg vitamin C.

Comments: The habitat was often burned to increase the number of plants and the number of berries produced.